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Chapter 1 Introduction

1.1 Before You Begin

AdvaCommand for Windows NT software provides the operator interface to monitor and control plant processes using the Advant OCS with Master software[1].

The AdvaCommand for Windows NT basic software contains the following:

- User Interface
- Event and Alarm
- System Status

This book is not intended to be the sole source of instruction for AdvaCommand for Windows NT software. Beside the basic functions there are some AdvaCommand for Windows NT software options which are described in separate books (see Section 1.5, Related Documentation).

Those people involved in day-to-day operation of the system should also attend the applicable operator courses offered by ABB.

1.2 Equipment Requirements

To run AdvaCommand for Windows NT software a PC Workstation is needed.

The requirements on the PC workstation are:

- CPU clock frequency of at least 200 MHz
- Primary memory (RAM) min. 64 Mbyte
- Hard disk, min. 2 Gbyte
- CD player
- One slot for ISA board
- One SCSI port
- One parallell (Centronic) port
- Two RS 232 serial ports
- A basic I/O system where it is possible to configure a 1 Mbyte address "window" for the RTA board on the internal memory bus
- One RTA board with 16 Mbyte RAM.

1. OCS = Open Control System

1.3 How to Use This Book

This book is organized into chapters and sections as shown in Figure 1-1.

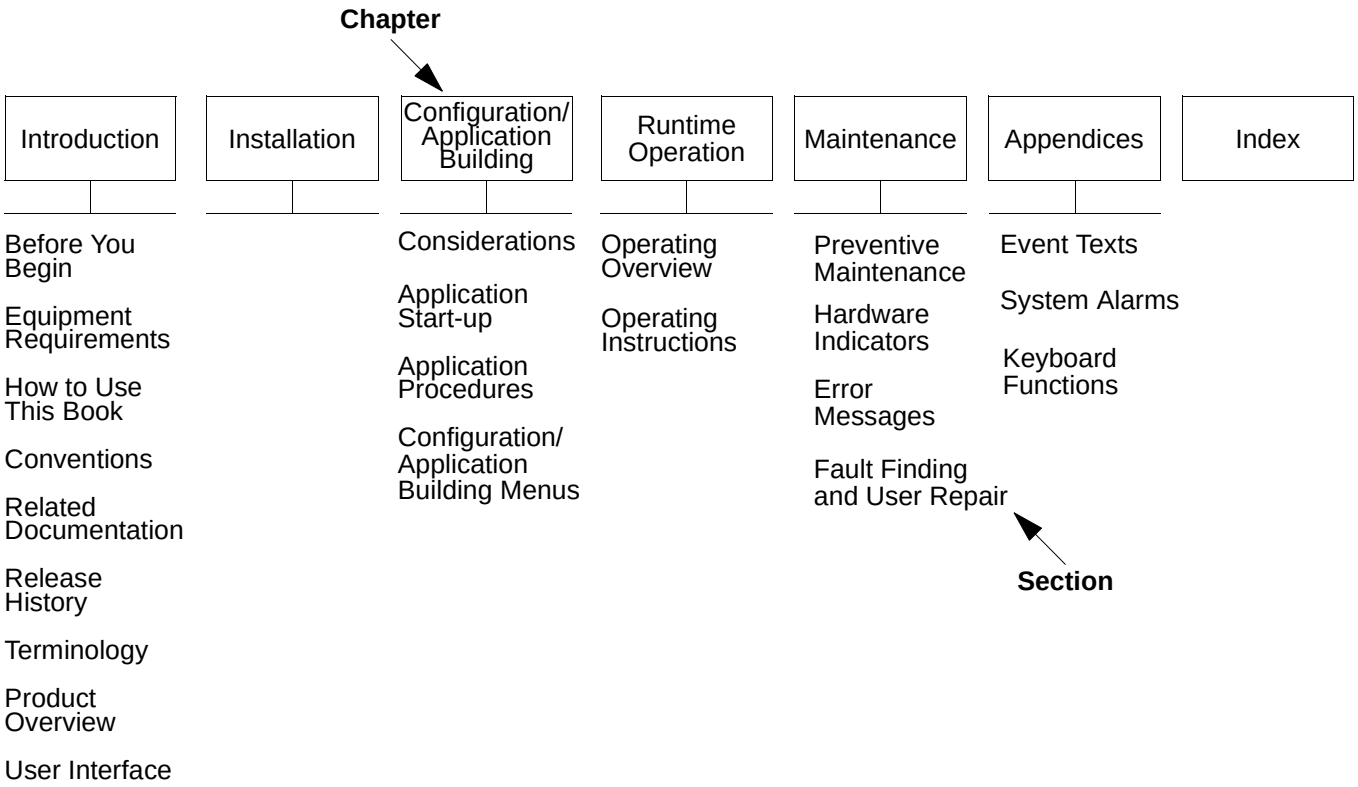


Figure 1-1. Organization of manual

Introduction

See this chapter for background information about AdvaCommand for Windows NT software's basic functions.

Configuration/Application Building

See this chapter for an examination of the features and functions of the basic function software and a description of the procedures to configure the functions.

Runtime Operation

This chapter provides you with instructions and reference information related to runtime operation. Specifically, this chapter provides a detailed description of display types, keyboard functions and other information related to operating the Advant OCS with Master software via the AdvaCommand for Windows NT software.

Maintenance

This chapter describes how to back up and restore functions and how to update the Real Time Accelerator (RTA) board.

1.4 Conventions

The following conventions are used throughout this manual for the presentation of material:

- The words in proper names of screen elements (for example, the title in the title bar of a window, the label for a field of a dialog box) are initially capitalized.
- The names of keyboard keys are boldfaced.
  - Initial capital letters are used for the name of a keyboard key if it is labeled on the keyboard. For example, the **Return** key or **<Return>**.
  - Lowercase letters are used for the name of a keyboard key that is not labeled on the keyboard. For example, the **space bar**, **comma key**, and so on.
  - In descriptions, the word "key" is used in conjunction with its name. For example, pressing the **Return** key initiates the process.
  - In tables and procedures, angle brackets replace the word "key." For example, press **<Return>**.
  - A dash is used to indicate that you must simultaneously press several keys. For example, **<Ctrl-C>** indicates that you must hold down the **Control** key while pressing the **C** key.
  - The phrase "press and release" is used to indicate that you sequentially press several keys. For example, to close a window, press and release **<Alt>**, and then **<F4>**. This indicates that you press and release the **Alt** key, and then you press and release the **F4** function key.
- The names of push and toggle buttons are boldfaced.
  - Initial capital letters are used for the name of a push or toggle button labeled on the display. For example, the **OK** button.
  - In descriptions, tables and procedures, the word "button" is used in conjunction with its name. For example, pressing the **OK** button initiates the process.
- The names of menus and menu items are boldfaced.
  - Initial capital letters are used for the name of menus listed in the menu bar. For example, the **File** menu.
  - Initial capital letters are used for the name of menu items. For example, to open a new window, choose **New** from the **File** menu.
- System prompts/messages are shown in the Courier font, and user responses/input are in the boldfaced Courier font. For example, if you enter a value out of range, the following message is displayed:

```
Entered value is not valid. The value must be 0-30.
```

In a tutorial, you may be told to enter the string TIC132 in a field. The string is shown as follows in the procedure:

```
TIC132
```

- The name of other manuals, that are refered to in the text, are in italic, for example: *AdvaBuild for Windows NT Display Builder User's Guide*

1.5 Related Documentation

Table 1-1 lists all documentation related to operator stations.

Table 1-1. Related documentation

Category	Title	Description
Hardware	AdvaCommand for Windows NT Hardware User's Guide	This book provides instructions for peripheral hardware setup and installation of the AdvaCommand for Windows NT operator station.
Options	AdvaCommand for Windows NT Process Sectioning User's Guide	This book provides instructions for accessing, and using all Process Sectioning functions.
	AdvaCommand for Windows NT Status List User's Guide	This book provides instructions for accessing, and using all Status List functions.
	AdvaBuild for Windows NT Display Builder User's Guide	This book provides instructions for accessing, and using all Display Builder functions.
Other	Functional Units Part 1 Summary and Common Property User's Guide	This book is an introduction to the functional units and describe how they are used.
	Functional Units Part 2 AI AO DI DO User's Guide	This book describe the functional units AI, AO, DI and DO.
	Functional Units Part 3 SEQ GROUP User's Guide	This book describe the functional units SEQ and GROUP.
	Functional Units Part 4 PIDCON RATIOSTN MANSTN User's Guide	This book describe the functional units PIDCON, RATIOSTN and MANSTN.
	Functional Units Part 5 GENCON GENBIN GENUSD User's Guide	This book describe the functional units GENCON, GENBIN and GENUSD.
	Functional Units Part 6 MOTCON VALVECON User's Guide	This book describe the functional units MOTCON and VALVECON.
	Functional Units Part 7 PIDCONA User's Guide	This book describe the functional unit PIDCONA.

1.6 Release History

This is the initial release of the basic functions software for AdvaCommand for Windows NT.

1.7 Terminology

The following is a list of terms associated with operator station that you should be familiar with.

Term	Description
Pointer	The pointer is an upper left pointing arrow which indicates where operator input is entered on the screen. For instance, use the pointer to indicate the display button you want to select when you click the mouse button or the field to which you want to input information via the keyboard. The **hotspot** of the pointer is the upper tip of the arrow. You manipulate the pointer via a mouse, trackball or keyboard. The pointer appears as a **cross** in base and overlap displays in **runtime**.
Selecting Objects	You select an object on the display by positioning the pointer over the object and pressing the left mouse button or pressing the key **Select** (on the trackball or keyboard). Only a single click or press is required to make a selection.
Keyboard Focus	More than one window can be displayed at the same time; however, only one window is active at a time. Keyboard focus determines which area of the screen or which element in a window receives input from the keyboard. The active window is indicated by highlighted window borders and a title bar.
Buttons	All buttons are depicted as raised above the plane of the screen. When a button is pressed, it appears lower than the plane of the screen. All areas of the screen that cannot be selected appear flat (that is, in the plane of the screen).
Menus	When configuring, you use pull-down menus and pop-up menus. The pull-down menus are usually placed in a menu bar. A pop-up menu is displayed directly below the button you use to select it, and the menu remains open until you take an action or explicitly close the menu. The menu does not require you to keep the mouse button depressed until you locate and select the desired item. No menus are used for runtime operation.

1.7.1 Acronyms

The following acronyms are used in this document:

Acronym	Description
OS	operator station

Acronym	Description
ACfWNT	A PC Workstation with AdvaCommand for Windows NT software installed (ACfWNT=AdvaCommand for Windows NT).
ACfUNIX	An operator station with AdvaCommand (for UNIX) software installed (ACfUNIX=AdvaCommand for UNIX).

1.8 Product Overview

AdvaCommand for Windows NT User Interface enables the operator to communicate with the process, the system and its applications. Functions included in the user interface give you the ability, provided you have appropriate authority, to select any object for manual control. Selection gives you exclusive access to this object and no one can intervene in this dialog, except to view it.

You can request importation and presentation of displays that are configured and stored in other operator stations. A copy of the selected display is transferred from one operator station to the requesting station, where it is installed in the same way as any other display prior to being used.

AdvaCommand for Windows NT Event and Alarm function displays the latest alarm at the top of the screen. The alarm is also announced audibly to make the operator aware of it. From this alarm line, you can directly select the troubled object for inspection and control, or you can choose the alarm list to examine the previous alarms.

AdvaCommand for Windows NT System Status provides status information about the automation system with regard to communication links, stations, peripheral equipment and process I/O boards.

1.9 User Interface

Mouse and Button Actions

The two mouse buttons are defined as select and drag.

Press

Indicates pressing a mouse button without releasing it. Use this action together with the actions drag and release.

Release

Indicates releasing a mouse button after you press it.

Click

Indicates pressing and releasing a mouse button without moving the pointer.

Double Click

Indicates clicking twice quickly without moving the pointer. Use a double click to perform the default action of an object.

Drag

Indicates pressing a mouse button without releasing it and then moving the position of the pointer. The drag action ends with a release action. Use dragging when, for example, you are drawing a rectangle or selecting several elements in a list.

Dialogs

Dialogs consist of commands, questions and answers between the user and the system.

You use dialog boxes primarily during **configuration**. You call up the dialog boxes to the screen by selecting various menu functions. They are user-interactive because they require you to make a selection from a number of possible choices.

The dialog used during **runtime** is executing via dynamic function keys. The operator can request presentation of a display, start a dialog or activate an external application. The operator can also select an object for control manually and set parameters for the object. The dialog for each display is presented in 10 fields at the bottom of the display.

Pop-up Menus

Pop-up menus consist of commands between the user and the system. These commands are the same as can be found on the functional keyboard.

Drag

Indicates pressing a mouse button without releasing it and then moving the position of the pointer. The drag action ends with a release action.

Chapter 2 Installation

Not applicable.

Chapter 3 Configuration/Application Building

3.1 Considerations

The configuration function includes various configuration tools. Normally, you work interactively with these tools. Some tools are set up to run in the background. This means that after you initiate the tool, you can work with, for example, process displays, while the tool is working. The Active Configuration Tools icon, looking like a wrench, is present in the Screen Header (see Chapter 4, Operation) if at least one configuration tool is active. If an error occurs, the background color for the icon changes to yellow. Click on the icon and a dialog box is presented, see Figure 3-1 below, which shows all the configuration tools that are currently active.

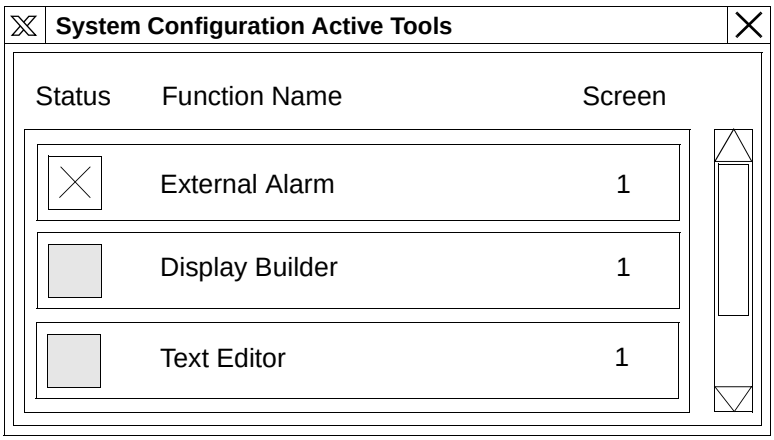


Figure 3-1. Active configuration tools dialog box

A red push button with a cross indicates an error. Select this push button and an error log file is presented. When the log file is closed, the tool is removed from the list of active configuration tools.

You can run the following tools in the background:

- Display Installation
- Backup of the operator station
- Text Editor
- Display Builder
- On-line Builder

- Define Hardcopy
- RTA Board Configuration
- Terminal Window
- View Diagnostic Log

Back up of the Real Time Accelerator (RTA) Board in operator station is always executed in the background.

3.2 Application Start-up

The subitem **System Config** in the pop-up menu **Operation**, is set up to activate the configuration function and to give you access to the different configuration tools.

Select **System Config** under the item **System Display Keys** in the pop-up menu **Operation**.

If you have selected **Max dialog** in the pop-up menu **Operation**, the following set of dynamic function keys (screen buttons) is displayed at the bottom of the screen:

D1 AdvaCommand…	D2 AdvaBuild…	D3	D4	D5
D6 Settings…	D7 Station…	D8 Maintenance…	D9	D10

Figure 3-2. Dynamic function keys - Max dialog

The max dialog is controlled by a password (see Section 3.2.2, Authority).

From this set of dynamic function keys, you can select a suitable configuration tool group. The set of dynamic function keys are:

D1 AdvaCommand…	Configuration of a group of functions mainly related to operator interaction, for example, process sectioning or external alarm.
D2 AdvaBuild…	Configuration of a group of functions mainly related to engineering, for example, Display Builder and Display Installer.
D6 Settings…	Configuration of a group of functions to set operator station parameters.
D7 Station…	Activation of a group of functions to restart operator station application
D8 Maintenance…	Activation of a group of functions to back up/restore handling and maintenance of RTA configuration data.

The key symbol in the screen header (see Chapter 4, Operation) indicates **Max dialog**. If you do not have access to the Max dialog, the dynamic function key texts are dimmed and you cannot use the keys.

Click on the dynamic function key that corresponds to the requested configuration group, for example, **F6** or click on the screen button D6 (Settings…). (For information on the grouping of tools and their group names, see Section 3.4, Menus.)

The following set of dynamic function keys is now presented at the bottom of the screen:

D1 Date and Time	D2 Station Settings	D3 Printer Config.	D4 Hardcopy Config.	D5
D6	D7	D8	D9	D10

Figure 3-3. Dynamic function keys - Max dialog - D6 Settings

Click on the dynamic function key that corresponds to the requested configuration tool. The Configuration Window for the tool is now presented.

3.2.1 Added Authority Level

The item **Max Dialog** in the pop-up menu **Operation**, is normally used to access configuration tools requiring authority. Some configuration tools require added authority to be accessed. The authority is controlled by a password.

When a configuration tool using password control is activated, a dialog box is presented which asks the user for a password, see Figure 3-4.

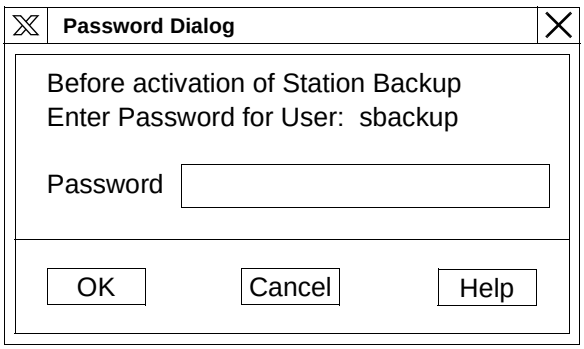


Figure 3-4. Dialog box for entering password

If the user enters the correct password, the selected configuration tool is activated (in this example, Station Backup). As a default, the password is the same as the user. For example, in the figure above, the user is **sbackup** and, as a default, the password is also **sbackup**.

Add Password Control to a Configuration Tool

To add password control to a configuration tool, do as follows:

1. Open a terminal window.

2. Enter the command `sh` and press `<Enter>` (the script must run in a korn shell).
3. Run the script dcConfigPassword by entering the command `dcConfigPassword <function> <user id>` and press `<Enter>`.

   Parameters:

   <function> is the name of the configuration tool that is presented on the dynamic key.
   <user id> is the name of the user in the system that the password is to be checked against.

   For each function in the System Configuration, there is a corresponding "NT user" name defined, for example, for the function Station Backup, there is an "NT user" named "sbackup". As default, these "NT users" have the same password and name. To change the password start the User Manager, select the user name, make your changes and then exit the User Manager.

   Example:

   To add password control for Display Builder by using the password for the "NT user" displayb, enter:

   ```
   >sh <Enter>
   $ dcConfigPassword 'Display Builder' displayb <Enter>
   $ exit <Enter>
   ```

   To change password for the "NT user" displayb, do as follows:

   a. Start the **User Manager**.
      (Start menu/Programs/Administrative Tools (Common)/ User Manager)

      The User Manager window is presented.

   b. Double-click on the user name displayb.

      A new window, **User Properties**, is presented.

   c. Enter a new password instead of the old.

   d. Confirm the new password and click OK.

      The User Properties window is closed.

   e. Exit the User Manager.
4. Make a function restart so that the changes take effect.

Remove Password Control for a Configuration Tool

To remove password control for a configuration tool, run the same script `dcConfigPassword` and enter `NULL` as <user id>.

Example:

Remove password control for On-line Builder by entering the command `dcConfigPassword 'Display Builder' NULL` and pressing `<Enter>`.

3.2.2 Authority

The authority is changed with the item **Max Dialog** from the pop-up menu **Operation** (see Section 4.2.4, Pop-up Menus). The authority to set maximum dialog (Max dialog), which gives the user full authorization, is controlled by a password. The default authority at login is minimum dialog (Min dialog).

When the cursor is outside a display element and the right mouse button is pressed a pop-up menu appears on the screen. There are two choices defined for authority, Max dialog and Min dialog.

When Max dialog is chosen a password dialog box appears.

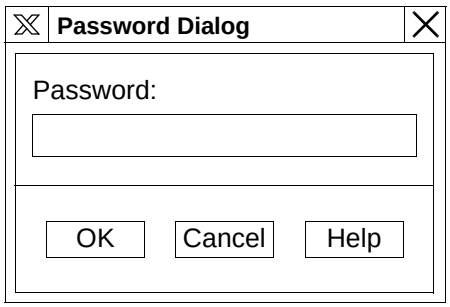


Figure 3-5. Password dialog box

The password at delivery is **aosmaxd0**.

3.2.3 Change Password

To change the password, do as follows:

1. Start the **User Manager**.
   (Start menu/Programs/Administrative Tools (Common)/ User Manager)

   The User Manager window is presented.
2. Double-click on the user name **aosmaxd1**.

   A new window, **User Properties**, is presented.
3. Enter a new password instead of the old (default at delivery: aosmaxd0).
4. Confirm the new password and click OK.

   The User Properties window is closed.
5. Exit the User Manager.

3.3 Application Procedures

Most subsections below corresponds to a special dynamic function key in a tool group in the configuration dialog (see Section 3.2, Application Start-up or Section 3.4, Menus). The tool group and the dynamic function key is indicated with a subheading immediately below the subsection heading.

3.3.1 Function Restart

Station…D1 Function Restart

Use this alternative when you have made or want to make configuration changes that require a restart of the operator station applications, that is change of language.

1. Press **F7** or click on the screen button D7 (Station...) in the configuration dialog.

   The following dynamic function keys are displayed at the bottom of the screen:

D1 Function Restart	D2 Station Restart	D3	D4	D5
D6 Terminal Window	D7	D8	D9	D10

Figure 3-6. Dynamic function keys - Max dialog - D7 Station…

2. Press **F1** or click on the screen button D1 (Function Restart).

   A dialog box, in which you confirm or cancel the restart, is presented.

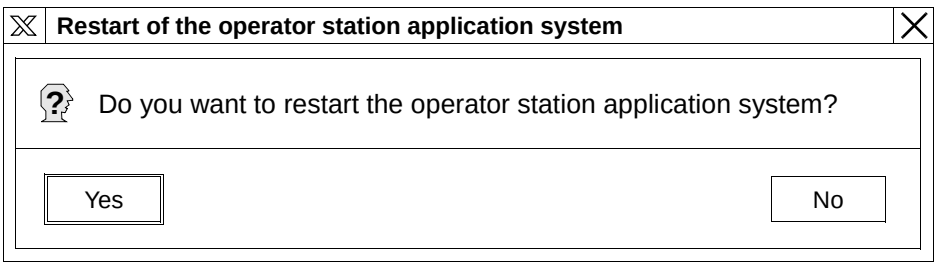

Restart of the operator station application system
Do you want to restart the operator station application system?
Yes
No

Figure 3-7. Dialog box for restart of operator station application

3. Click on the **Yes** button to confirm the restart.

   If you want to cancel the request for a restart, click the **No** button.

3.3.2 Station Restart

Station…D2 Station Restart

Total restart of the operator station. This means rebooting the operating system and a restart of the operator station applications.

Use this alternative when, for example, you need to shut down the operator station for workstation maintenance.

At Station Restart, the complete operator station is shut down, the operating system is loaded and the operator station, including its application, is started.

1. Press **F7** or click on the screen button D7 (Station...) in the configuration dialog.

   The following dynamic function keys are displayed at the bottom of the screen:

D1 Function Restart	D2 Station Restart	D3	D4	D5
D6 Terminal Window	D7	D8	D9	D10

Figure 3-8. Dynamic function keys - Max dialog - D7 Station…

2. Press **F2** or click on the screen button D2 (Station Restart).

   A dialog box, in which you can confirm or cancel the restart, is presented.

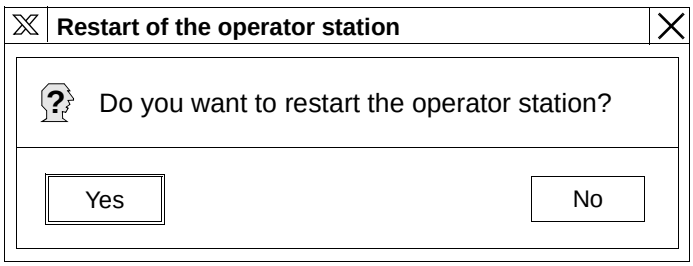


Figure 3-9. Dialog box for restart of the operator station

3. Click the **Yes** button to confirm the restart.

   If you want to cancel the request, click on the **No** button.

3.3.3 Terminal Window

Station…D6 Terminal Window

When activated, this function opens a window into the NT environment.

1. Press **F7** or click on the screen button D7 (Station...) in the configuration dialog.

   The following dynamic function keys are displayed at the bottom of the screen:

D1 Function Restart	D2 Station Restart	D3	D4	D5
D6 Terminal Window	D7	D8	D9	D10

Figure 3-10. Dynamic Function Keys - Max Dialog - D7 Station…

2. Press **F6** or click on the screen button D6 (Terminal Window).

   The following window is displayed:

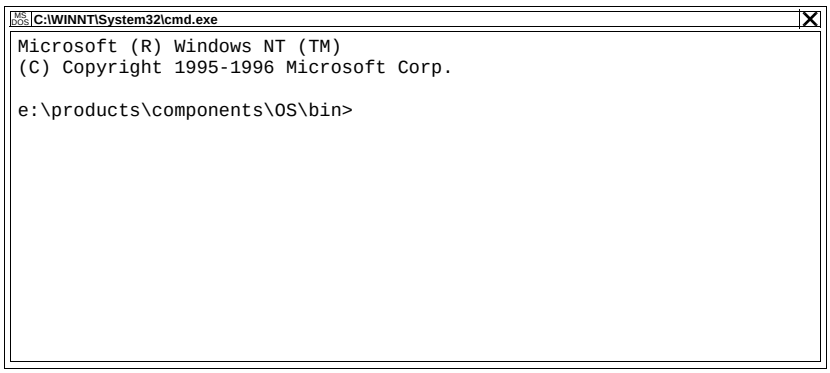


Figure 3-11. Configuration tool terminal window

The window illustrated in Figure 3-11 is a DOS window. Many scripts, for example dsConfigPassword, requires Korn Shell. To activate Korn Shell, enter: `sh <Enter>`. To return to DOS again, enter: `exit <Enter>`.

3.3.4 Display Installer

AdvaBuild…D2 Display Installer

Use the Display Installer to install and uninstall displays in the operator stations. You can also use the Installer to look at the current status of displays. For configuration it is necessary to have a mouse connected to the operator station.

The Display Installer can be started by doing the following sequence:

1. Press **F2** or click on the screen button D2 (AdvaBuild…) in the System Configuration Dialog.
2. Press **F2** or click on the screen button D2 (Display Installer).

NOTE

You can not select the Display Installer without full user authorization (that is you need to have selected **Max dialog** from the pop-up menu **Operation**).

The following window is presented:

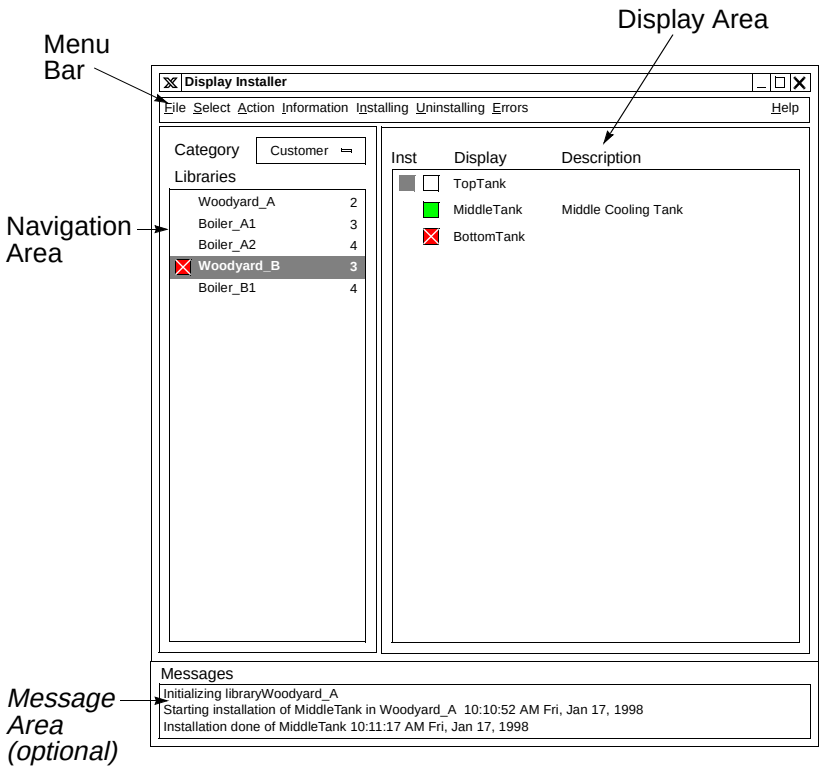


Figure 3-12. Display Installer dialog box

The Display Installer presentation includes three main parts: Menu Bar, Navigation Area, and Display Area. There is also an optional Message Area.

3.3.4.1 Navigation Area

In the Navigation Area, two items are shown: Category and Library.

The **Category** item shows the currently chosen category in the Display Installer. You can choose one of the three categories: **Standard**, **Adaptions** or **Customer**. Users are allowed to install and uninstall displays under Customer category, but not under Standard and Adaptions categories. Despite that, the users can look at displays status under the Standard and Adaptions categories.

The **Library** item shows all libraries of the current Category. By selecting a Category, all libraries of the selected Category will be shown in the Library menu. A library is a physical place where source code of displays is placed.

3.3.4.2 Display Area

The Display Area contains all displays of the chosen Category and Library in the navigation area. A display is represented by a display indicator, which shows the current status of the display, the display name and a display description (if it exists).

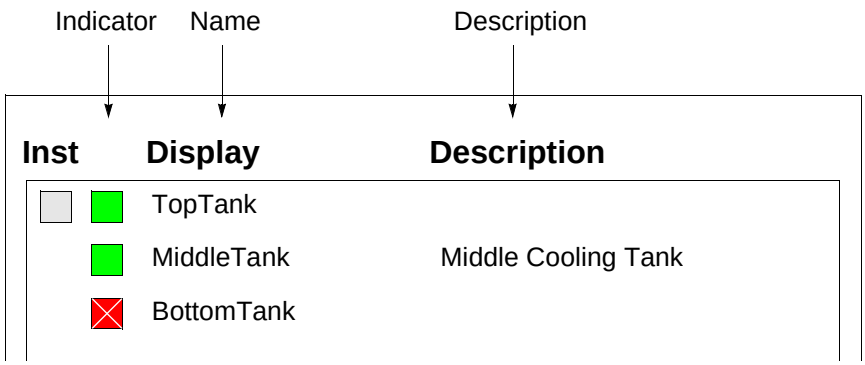


Figure 3-13. A display in the display area

You can select one of the displays by clicking the left mouse button on the name area. By clicking on the indicator area you can get a window with the display installation log if the display was installed recently.

By pressing the right mouse button on the name area on a selected display, you get the following menu:

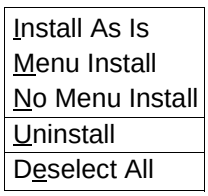


Figure 3-14. Install menu

Install As Is	Means that the display is installed as previously installed. If the display is not installed, it means **Menu Install**.
Menu Install	Means that you start installation of the display.
NoMenu Install	Means that you start installation of the display, but the installed display will not come up in the Display Menu.
Uninstall	Means that you uninstall the display.
Deselect All	Means that you deselect all selected displays.

The different states of the display indicator are as follows:

Table 3-1. Status of the left display indicator

Indicator	Color	Description
	Grey (filled)	**Source code missing.** The display is installed, but does not have a source code any more. **WARNING** If the display is uninstalled it is lost unless there is a backup.

Table 3-2. Status of the right display indicator

Indicator	Color	Description
	Grey (filled)	**Not installed.** The display is not installed.
	Green (filled with a black corner)	**Installed.** The display is installed, but not available in the Display Menu.
	Green (filled)	**Installed.** The display is installed.
	Green (filled with a circle)	**Source code changed.** The display is installed, but the source code has been changed since last installation.
	Green (half filled)	**Different source code.** The display is installed and the last installation of the display was done from source code with the same name but in another library, category.

Table 3-2. Status of the right display indicator (Continued)

Indicator	Color	Description
⧖	Yellow (filled with an hour-glass)	**Installing.** The display is under installation.
☒	Red	**Error.** The latest installation of the display went wrong.

3.3.4.3 Menu Bar

The Menu Bar is located in the upper portion of the Installer window and consists of pull-down menus for all activities you need in the installer. We have the following pull-down menus: File, Select, Action, Information, Installing, Uninstalling, Errors and Help.

File

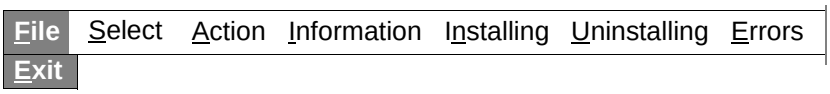


Figure 3-15. Display Installer - File menu

Exit	Terminate the Display Installer Configuration.

Select

Select (or deselect) displays from the current library and current category .

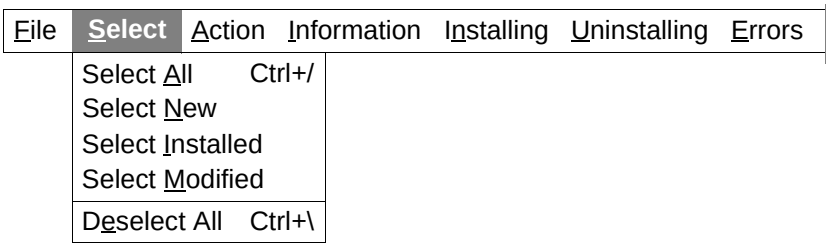


Figure 3-16. Display Installer - Select menu

Select All	Select all displays in the current library and current category.
Select New	Select all displays in the current library and current category that are not yet installed.

Select Installed	Select all installed displays in the current library and current category.
Select Modified	Select all displays in the current library and current category that are newer than the installed version.
Deselect All	Deselect all selected displays.

Action

With this menu you can perform all library and display handling actions, for example install or unistall displays.

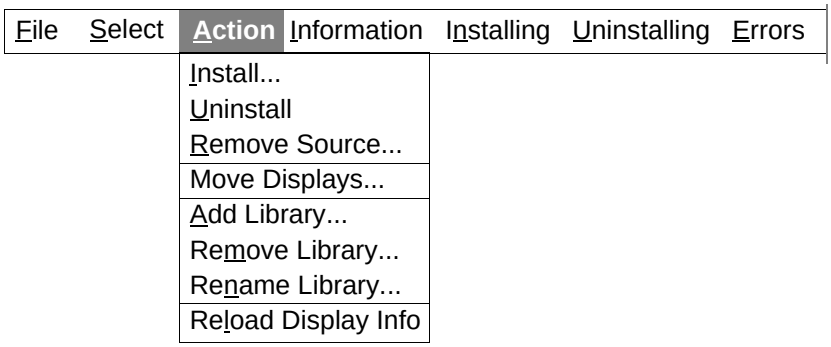


Figure 3-17. Display Installer - Action menu

Install...	Install all selected displays in the current library and current category. When an overlapping dialog box is presented, click on the **OK** button to start the installation. The display is then available to use and can be selected from the Display menu.

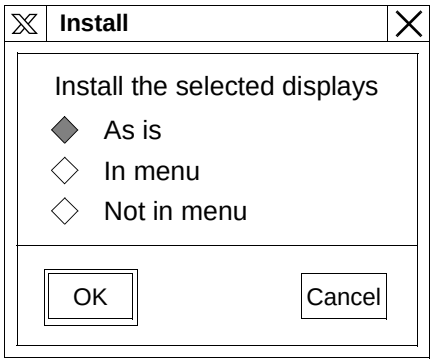


Figure 3-18. Install dialog box

Uninstall	Uninstall all selected displays in the current library and current category.
Remove Source...	Remove source for the selected displays. The displays are also uninstalled.
Move Displays...	Move or copy all selected displays to the library selected in the dialog box.
Add Library...	Add a new library. The name is given in the dialog box.
Remove Library...	Remove a library. All displays have to be removed before the library can be removed.
Rename Library...	Rename a library. The name is given in the dialog box.
Reload Display Info	Reloads display information from persistent storage. May be used when the displays have been changed.

Information

With this menu you can either get the complete information about the available displays, which you select one at a time, or you can show/hide the optional Message Area.

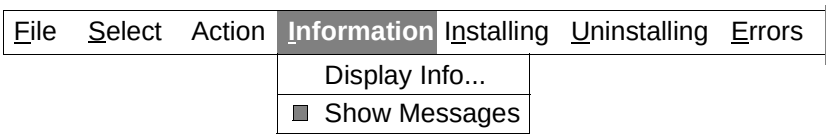


Figure 3-19. Display Installer - Information menu

Display Info...	Gives complete information about one display.
Show Messages	Shows/hides the optional **Message Area** below the list of displays. In the Message Area details on what is going on is shown. The item functions as a togglebutton.

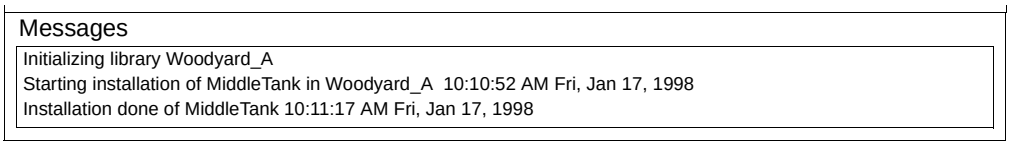

Messages
Initializing library Woodyard_A
Starting installation of MiddleTank in Woodyard_A 10:10:52 AM Fri, Jan 17, 1998
Installation done of MiddleTank 10:11:17 AM Fri, Jan 17, 1998

Figure 3-20. Message area (optional)

Installing

If the text Installing is not dimmed, the menu gives a list of displays currently waiting to be installed.

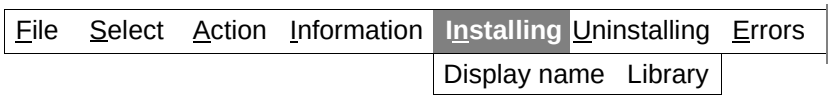


Figure 3-21. Display Installer - Installing menu

If you change your mind about a display that is currently waiting to be installed, it is possible to remove it from the Installing menu.

Do as follows:

1. Select the Display in the **Installing** menu. The Remove Installing dialog box appears.

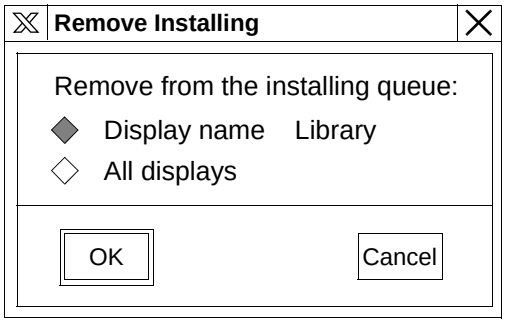


Figure 3-22. Remove Installing dialog box

2. Click on the **OK** button and the display is removed from the Installing menu.

Uninstalling

The Uninstalling menu gives a list of displays currently waiting to be uninstalled.

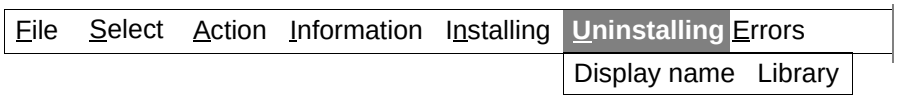


Figure 3-23. Display Installer - Uninstalling menu

Errors

If the text Errors is not dimmed, the menu shows a list of displays that got error in the latest installation. After selecting one you get the installation log file (in the dialog box 'Messages from...').

You can also get the log file by clicking with the leftmost mousebutton in the red indicator in the Display Area.

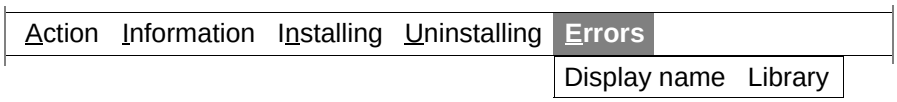


Figure 3-24. Display Installer - Errors menu

Help

The menu shows information about the installer.

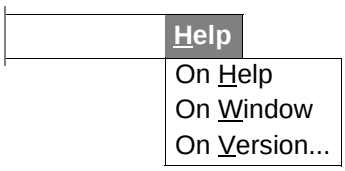


Figure 3-25. Display Installer - Help menu

On Help	Information about how to use Help.
On Window	The menu shows the Help window of the Display Installer. By clicking the left mouse button on a selected subject in the Help window you get a short information about all activities of the Display Installer.
On Version...	Information about the version of the Display Installer.

3.3.4.4 Installing Procedure

A display can be installed as follows:

1. Point at the name area of the chosen display.
2. Choose, with the right mouse button, the **Install** item from the **Install** menu.

A number of displays can be installed as follows:

1. Click the left mouse button on one display name in the Name Area and hold the mouse button down while dragging the mouse in the Display Area.
2. Choose **Install** in the **Action** menu of the Menu Bar.

Uninstallation of the displays can be done in the similar way as installation.

The difference between **Install** and **NoMenu Install** in the **Install** menu is that NoMenu Install will not show the installed display in the **Display Menu**.

Installation Log File

Whenever a display is installed and an error occurs, you can call up the error information window in two different ways:

- Select the corresponding **item** in the **Errors** menu

  or

- Click with the left mouse button in the indicator of the display in the Display Area.

3.3.5 Display Transfer

AdvaBuild…D3 Display Transfer

Display transfer is used to make displays available in more than one operator station in the distributed control system. The transfer of displays can be done in run-time.

For information about initial set-up, see "Release Notes" for AdvaCommand for Windows NT.

3.3.5.1 Overview

Normally displays are created and configured in one, or maybe a few stations (a station is a node in the network). The displays are then distributed to the stations where they should be available for presentation. The installation tool is used to convert the displays to a form suitable for run-time presentation, see Figure 3-26.

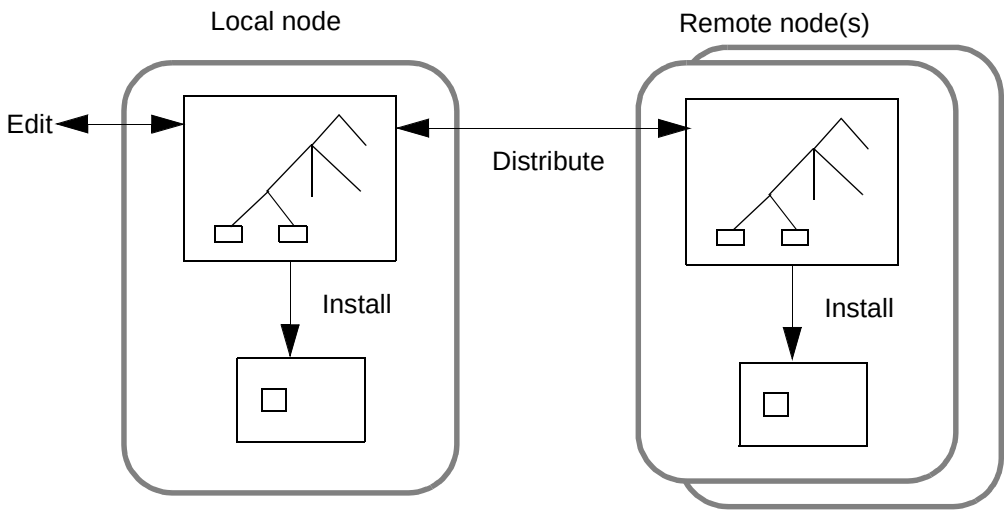


Figure 3-26. Displays are edited, distributed and installed

The transfer function copies or moves displays or display libraries to or from a remote station, as well as to or from tape.

NOTE

A faster display transfer via tape using "tar" is described in the "Release Notes" for AdvaCommand for Windows NT.

If a transfered display is modified in one of the target nodes, two different versions of the display with the same name will exist, one in the local node and one in the target node.

NOTE

It is the responsibility of the display configurator to make sure that the right version of the displays are located in the right node(s).

Information about displays, as display size, modification date etc., can be used to assure that the correct versions are used.

3.3.5.2 Display Transfer Functions

The following display transfer functions are available:

- Copy a display or a display library to or from a remote station
- Move a display or a display library to or from a remote station
- Copy and move displays and display libraries on the local station
- List libraries and displays on the local/remote station
- Present information about displays, libraries and nodes
- Create, delete and rename libraries on local/remote station
- Copy a display or a display library to or from tape

3.3.5.3 Display Transfer Main Window

The Display Transfer can be started by doing the following sequence:

1. Press **F2** or click on the screen button D2 (AdvaBuild...) in the System Configuration Dialog.
2. Press **F3** or click on the screen button D3 (Display Transfer).

The following window is presented:

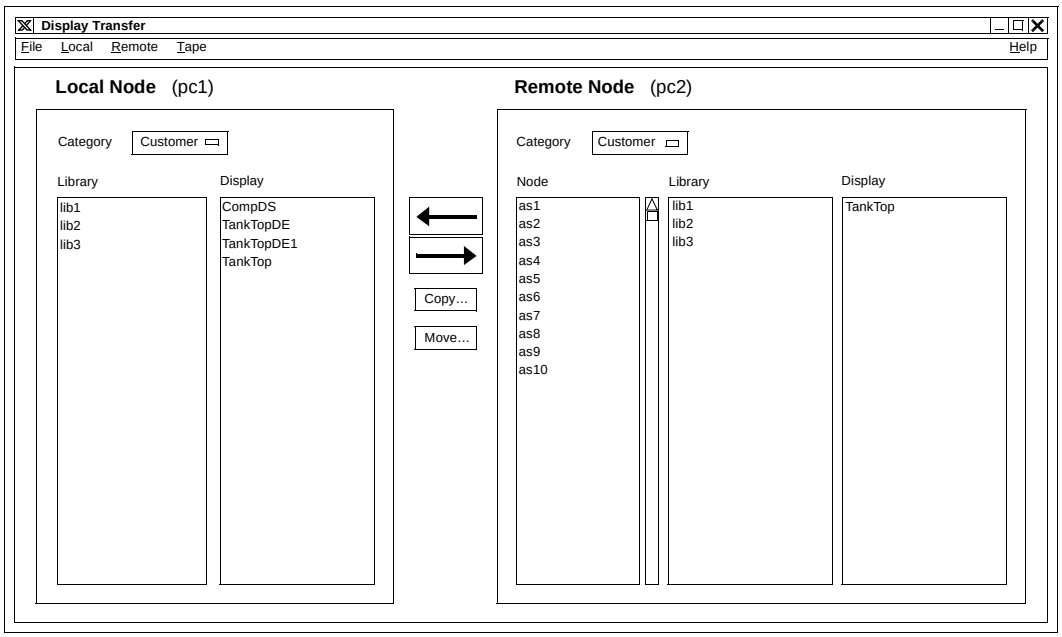


Figure 3-27. Display Transfer main window

The window is divided into two major parts, the **Local** node to the left and the **Remote** node to the right. The local node is the station at which the Display Transfer was started. A **Category** option menu is used to change between the different user categories defined. Besides this the window contains a menu bar, buttons for selecting the direction of the transfer (the **Left Arrow** is used to get displays to the local station and the **Right Arrow** to distribute displays to other stations), and buttons to start the **Copy** and **Move** operations.

To view libraries and displays in the local station (that is the station from which the application was started) select which category to view with the Category option menu. All libraries in this category are listed in the library list. To view displays in a library, select the library and all displays in this library are listed. For a remote node, select station in the node list and perform the same actions as in the local station.

3.3.5.4 Menu Bar

The Menu Bar is located in the upper portion of the Main Window and consists of the following items:

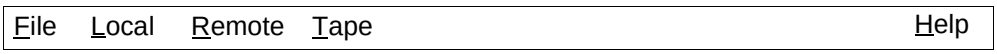


Figure 3-28. Menu bar for the display transfer main window

File	The File menu contains only the **Exit** item.
Local	Provides functions that applies to the local node.
Remote	Provides functions that applies to the remote node.
Tape	Functions for saving and restoring displays on tape.
Help	This menu contains information for the first time user of the Display Transfer.

Each item consists of a pull-down menu with the possible actions. They are described in subsequent sections.

3.3.5.5 Copy Display or Library to or from a Remote Station

The Copy function means to first make an exact copy of a display (the modification date is not changed by the copy operation), and then move it to an other node and place it in a library. The original display is not affected by this.

To copy a display from the local station to a remote station:

1. Select direction (click at the **Right Arrow** button)
2. Specify category in the local **Category** option menu
3. Select library in the local **Library** list. The displays belonging to the library are shown in the Display list.
4. Select display in the local **Display** list
5. Select a remote station from the **Node** list
6. Choose category in the remote **Category** option menu. The display libraries on this node are shown in the remote Library list.
7. Select a library from the remote **Library** list.
8. Press the **Copy** button.

A dialog box is displayed, see Figure 3-29.

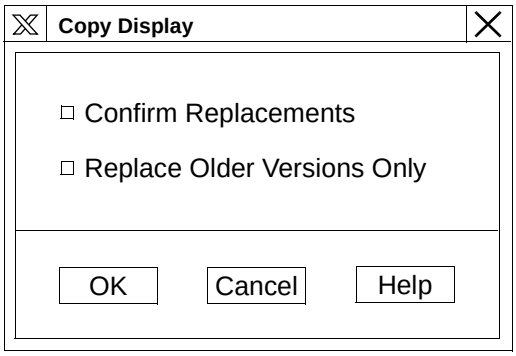


Figure 3-29. Copy Display dialog box

You can specify "Confirm Replacements" and "Replace Older Versions Only". The "Confirm Replacement" option opens a Confirmation Dialog Box and asks for confirmation before a possible overwrite of a display at the remote station. If the option "Replace Older Versions Only" is selected, only a display at the remote station that are older than the display at the local station is replaced.

To start the copying, click **OK.**

To copy a display from a remote station to the local node, choose the left arrow (direction left), and then category and library at the local node and category, library and the display to copy at the remote station.

To copy all displays in a library, do not select any display, just select the library. Press the **Copy** button, and all displays in the selected library are copied to the selected destination library.

If the copy operation fails for some reason (for example not enough space on disk) an information box is displayed. See also Section 3.3.5.11, Error Handling.

3.3.5.6 Move a Display or Library to and from a Remote Station

The Move function has the same functionality as the Copy function. The difference is that when a display is moved, it is actually first copied and then the original is removed. The display only resides after a move in the station to which it was moved. The modification date is not affected by the move operation.

To move a display to a remote station press the **Move** button instead of Copy. The following dialog box is displayed, see Figure 3-30.

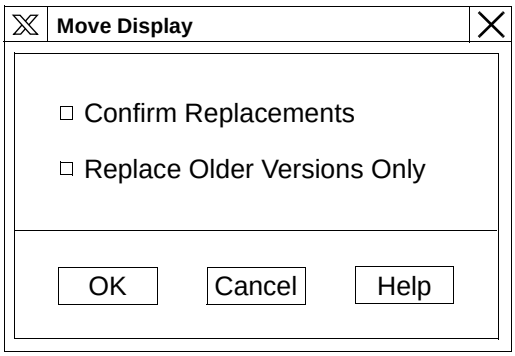


Figure 3-30. Move Display dialog box

To start the Move operation click **OK**. If you don't want to perform the move operation just click **Cancel**.

3.3.5.7 Copy or Move of Displays and Libraries in the Local Station

By selecting the local node in the remote node menu, it is possible to move and copy displays between libraries in the local station.

3.3.5.8 Information about Nodes, Libraries and Displays

Information about nodes, libraries and displays is easily reached by means of the Menu Bar, see Figure 3-31:

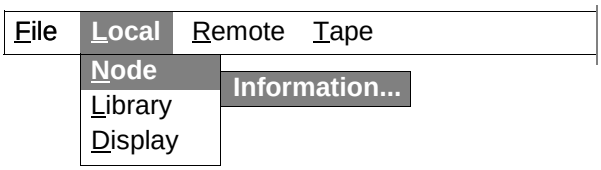


Figure 3-31. Local menu - Node options

To get information about the local node, choose **Node** in the **Local** menu. Choose **Information** and an information box, Figure 3-32 is shown.

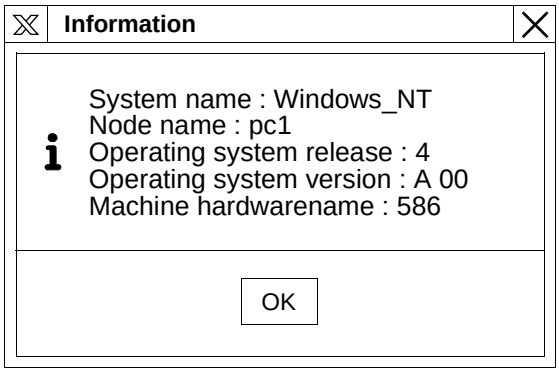


Figure 3-32. Local node information box

To get information about a library choose **Library** in the **Local** menu. A menu is displayed with Info as one of the items. A click on the Info item gives the following information box, see Figure 3-33.

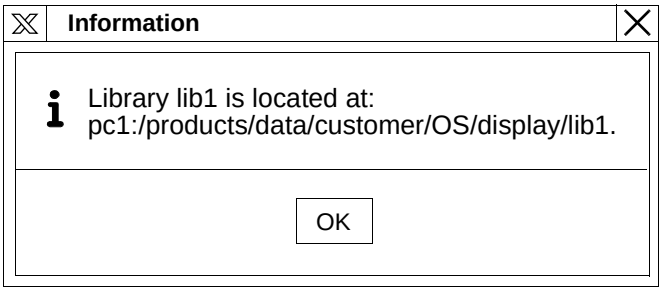


Figure 3-33. Library information dialog box

Information about a display is reached the same way. Choose **Display** in the Local menu. A menu is presented, with **Information** as the only item. A click on the Info item gives the following information, Figure 3-34.

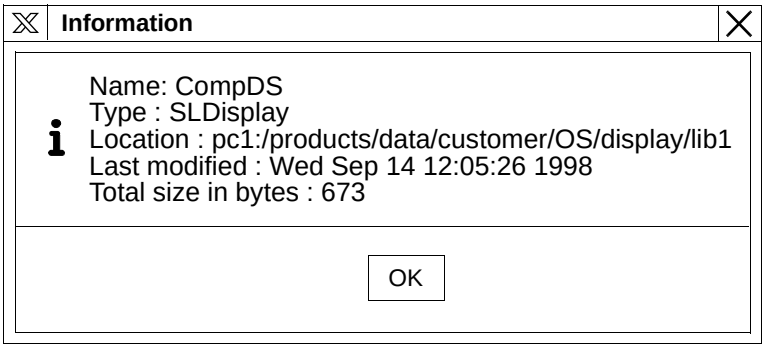


Figure 3-34. Display information box

Information about a remote station is reached the same way. Select the **Remote** pull-down menu from the menu bar instead.

3.3.5.9 Create, Delete and Rename Libraries on Local/Remote Station

You can create, rename and delete libraries on both the local and the remote station. This is done on the local node by choosing **Library** in the **Local** menu, Figure 3-35:

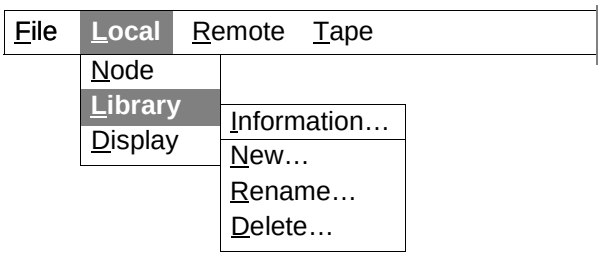


Figure 3-35. Local menu - Library options

A menu is presented which contains three further items, **New**, **Rename** and **Delete** in addition to the **Information...** item, described above.

To perform any of these actions, click the action. An associated dialog box is presented and you are asked to specify additional information, a new name for example. To perform the action and to close the boxes you click the **OK** button. If you do not want to perform the requested action,

just click the **Cancel** button. The dialog boxes are shown in Figure 3-36, Figure 3-37 and Figure 3-38 below.

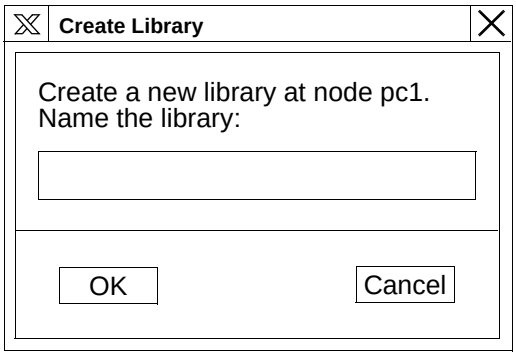


Figure 3-36. Create Library dialog box

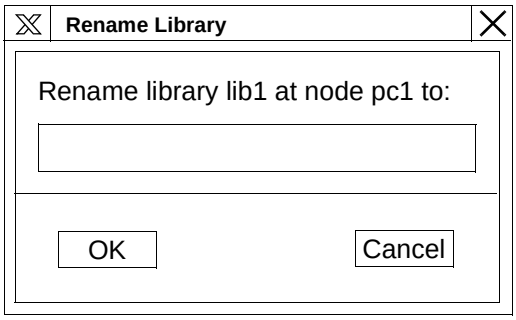


Figure 3-37. Rename Library dialog box

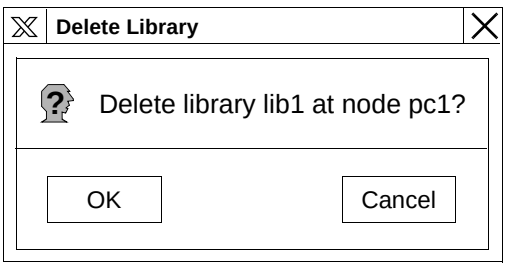


Figure 3-38. Delete Library dialog box

To perform the same operations on remote node select a node in the node list and choose **Remote** in the Menu Bar, Figure 3-39:

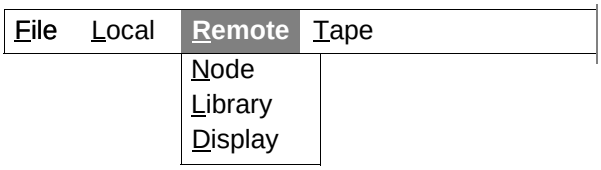


Figure 3-39. Display Transfer - Remote menu

The actions works in the same way as for the local node.

3.3.5.10 Copy a Display or a Display Library to or from a Tape

Created and configured displays from the local station can be saved on a tape. You can also restore displays from tape to the local station.

NOTE

A faster display transfer via tape using "tar" is described in the "Release Notes" for AdvaCommand for Windows NT.

These functions are reached by choosing **Tape** in the Menu Bar.

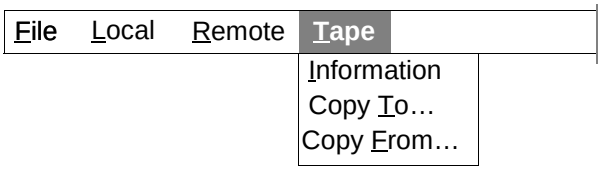


Figure 3-40. Display Transfer - Tape menu

When clicking on the Tape item a pull-down menu is shown, see Figure 3-40. The **Information** item presents information about the tape station used, see Figure 3-41.

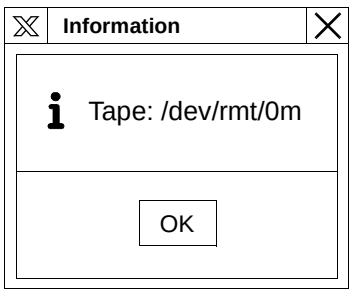


Figure 3-41. Tape information box

To copy a display to tape, select the display on the local station and click **Copy To…**. The Copy To Tape Dialog Box will be presented on the screen, Figure 3-42.

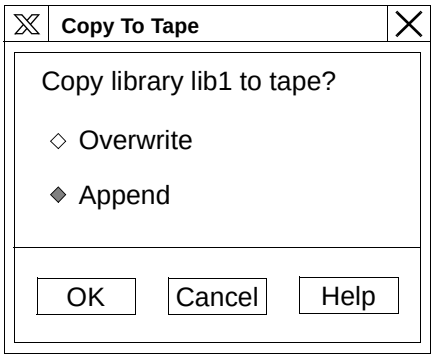


Figure 3-42. Copy To Tape dialog box

The box presents some information and gives you two options to choose between ”Overwrite” or “Append”. If the “Overwrite” option is selected, the selected display will be written to the beginning of the tape and by that overwrite all earlier displays on tape. If instead the option “Append” is selected, the display is appended to the previous contents and all earlier displays will remain on the tape.

NOTE

An important thing to note is that if there already exists a display on tape with the same name as the display to be copied, the display on the tape will be overwritten and there will be no way to reach it.

The action is performed by clicking the **OK** button. If the requested action is not wanted, just click the **Cancel** button.

To restore a display from tape to the local station, first select a library to which the display will be copied. After this select the **Copy From…** item in the Tape pull-down menu. This action presents a Copy From Tape Dialog Box, see Figure 3-43.

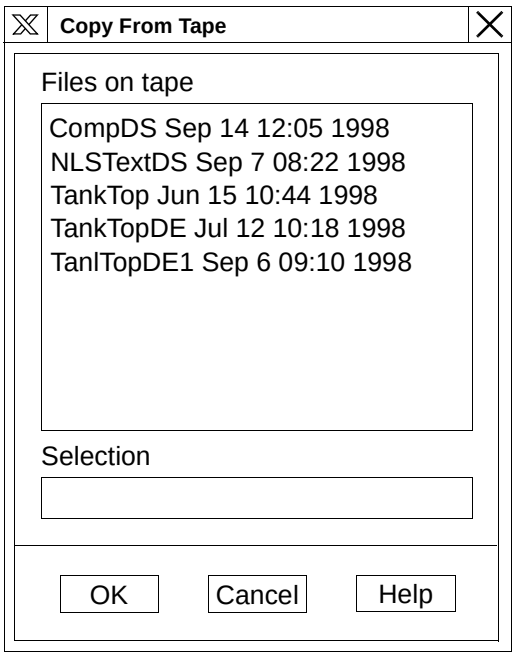


Figure 3-43. Copy From Tape dialog box

All displays on tape are listed in this box and you choose a display and click on the **OK** button to perform the action. The display will now be copied to the selected library.

If you do not wish to perform the action just click the **Cancel** button.

3.3.5.11 Error Handling

During, for example, the Copy and Move operations some errors may occur. The Display Transfer responds by displaying an error dialog box. An example is shown in Figure 3-44:

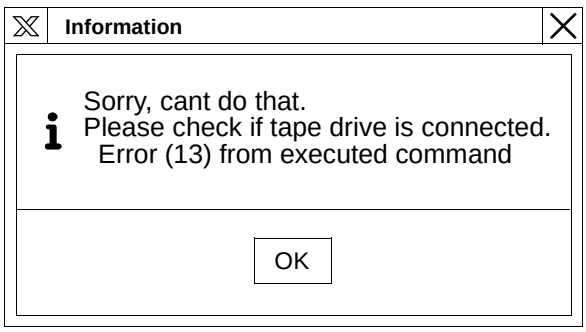


Figure 3-44. Error dialog box

When you have read the information click **OK** to remove the box. When you have solved the problem you can try to perform the operation again.

Some error situations which can occur are:

- No contact with remote node.
- The remote node is not a station or is not correctly configured (for example no executable setup script in remote node).
- You are not authorized to execute some of the used programs on the remote node.
- The remote node (or the network) goes down during a transmission. The displays are always copied first to a temporary place, to ensure that a display is not left in an inconsistent state. The temporary files are deleted the next time a successful transfer is made to or from the node.
- Wrong file or directory protection.
- Some of the used programs are missing in one of the nodes (check version of operating system and installed software components).
- The files to copy already exist in the remote node. If you have selected the option "Confirm replacements" a confirmation dialog will be displayed.
- No contact with the tape drive (wrong protection or not connected).
- The tape contains no displays.
- Can not create, delete or rename libraries (access denied).
- Can not get node information.
- The program terminates abnormally for some reason (for example, if you have pressed Ctrl-C). A dialog box is displayed and if you clicks **OK** a cleanup is done and the program terminates.

3.3.5.12 Exiting Display Transfer

To leave the Display Transfer select the **Exit** item in the **File** menu.

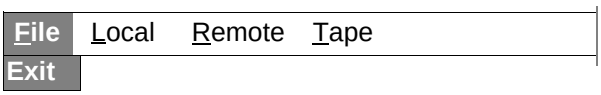


Figure 3-45. Display Transfer - File menu

3.3.6 Automatic Display Exchange or Printout

There can be different situations where you maybe want to automatically make a display exchange or an automatic printout of a display. For example, you want to display a certain pro–cess display on a specific screen at a certain event in the process. This can be controlled by an AMPL[1] program. You can also, at certain times have a printout of a simple report in the shape of an ordinary display built as a report. For this purpose there are a number of display elements, which are specially adapted for building simple reports. To control a display exchange or a printout event driven or time controlled there is a special PC element, REPORT.

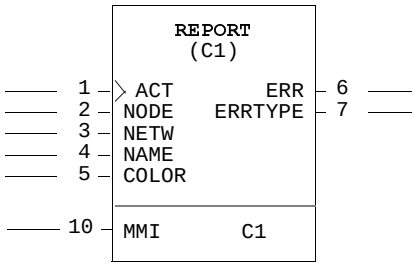


Figure 3-46. PC element REPORT

PC element REPORT

ACT	Input to activate the element.	
NODE	Node number of the operator station where the display is to be presented.	
NETW	Network number of the bus which connects the process station concerned with the operator station where the display is presented.	
NAME	Display name of the display to be presented.	
COLOR	Color code: -1 =	The display will be presented as a base display on the defined screen. The display must be defined as a base display.
	Color code: -2 =	The display will be presented as an overlap display on the defined screen. The display must be defined as an overlap display.
MMI	MMI code: 1 or 2 =	Defines on which screen the display is presented. Screen 1 or screen 2.
	MMI code 3 =	Defines that postscript generated hardcopies will be printed without presenting the display on the screen. Property COLOR has no meaning in this case.

1. ABB Master Programming Language

ERR	A fault has developed in the connection to the operator station.	
ERRTYPE	0=	Transmission OK.
	1=	No connection via channel to the operator station.
	2=	"Busy channel" occupied. The element makes three attempts to transmit the messages after which further attempts are aborted.
		Attempt to activate the element under "busy".
	3=	A message, after 3 transmission attempts has not
	4=	reached the operator station.

NOTE

PC element REPORT with C1-parameter was introduced in MasterPiece 200/1 version 4.0. Older PC element REPORT has MMI set to 3.

With the PC element REPORT you can generate printouts of displays on a printer without first presenting the display on a screen. The function generates a postscript file that is sent to a printer queue that is named Postscript. This queue is by default connected to the same printer as the hardcopy queue. It is therefore required that this printer can handle postscript.

It is however possible to change the Postscript queue so that it is connected to another printer output, for example in the TCP/IP network. How this is done is described in the section Printer Configuration in this manual.

It is possible to use a black and white printer that can give a grey scale printout.

At display exchange on the screen you can, with the input COLOR on the PC element, choose if the display shall be presented as a base display or as an overlap display.

With the input MMI you can select the screen where you want the display presented.
You can also choose to get the display generated as a postscript file and get it printed out as a display on a hardcopy printer.

Below follows an example on how you can build a simple report display and get it printed out on a hardcopy printer.

A report is an assembly of measured values and calculated values from the process. If this data is instantaneous or accumulated from a process section it is accessed in the process data base in the process station. But if the data resides on the plant network, for example values from laboratory, corrected and optimized results, it is accessed from the data base in Information Management Stations. In both cases the reports are presented in operator stations.

The report displays are built in the same way as process displays. A larger quantity of data is transferred more effectively with special display elements.

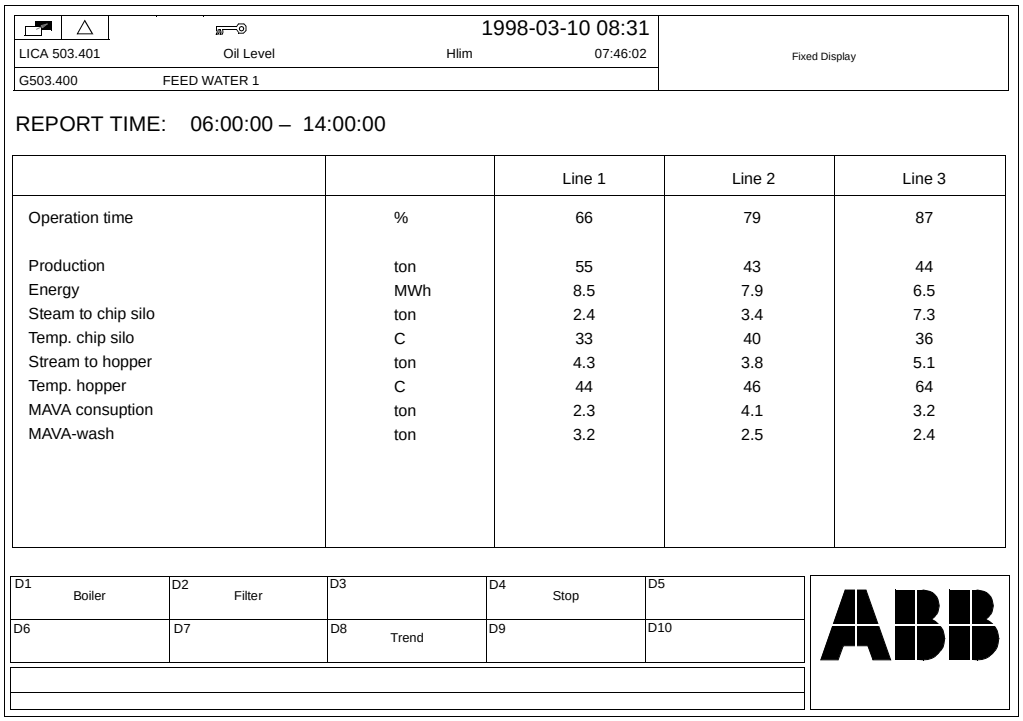


Figure 3-47. Example of a report display

The report printout can be obtained on all printers that can handle postscript printouts. The printout is generated automatically, on the occurrence of predetermined process events or at specific points in time, or manually by the operator.

This section describes how report data is assembled in a process station.

3.3.6.1 Assembly of Report Data

All data from MasterPiece 200/1 and Advant Controller 400 Series to be included in the report display is assembled with the PC-program and is entered into the process station data base in DAT elements. DAT is described in the data base element manuals for the process stations.

The DAT elements can be organized in blocks to satisfy efficiency requirements. It is then pos–sible to utilize the special display elements prepared for the report function. All DAT elements within the same block must be in consecutive order in the data base. The blocks are divided into four different types, adapted to different display elements.

Type 1

Utilized to transfer a real value and consists of a DAT(B) element directly followed by a DAT(R). DAT(B) shows the status of the succeeding DAT(R) element which contains the real value to be presented in a report display.

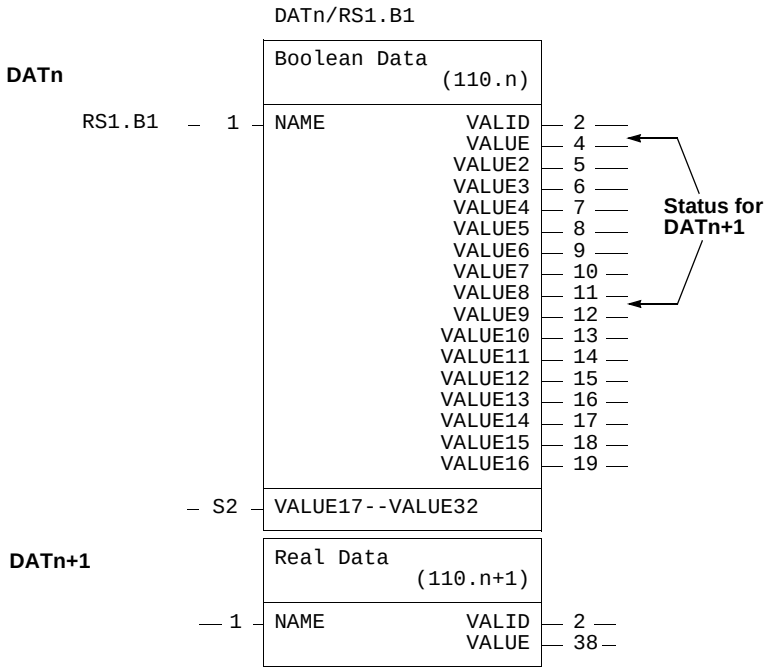


Figure 3-48. DAT element structure for Type 1

As Advant Station 100 Series Engineering Stations creates DAT elements and their instance numbers, you must yourself verify that the DAT elements, in the same block, are arranged in consecutive order.

Type 2

Utilized to transfer 4 real values. It contains a DAT(B) directly followed by 4 DAT(R). DAT(B) shows the status of the succeeding DAT(R) elements which contain the real values which can be presented in the report display.

Table 3-3. Significance of the status flags in DAT(B)-instance n for succeeding consecutive DAT(R)

	Flag valid for:				**Status**	**Significance**
	DAT n + 1(R)	**DAT n + 2(R)**	**DAT n + 3(R)**	**DAT n + 4(R)**		
DATn (B) VALUE	1	9	17	25	1	1 decimal
	2	10	18	26	1	2 decimals
	3	11	19	27	1	3 decimals
	1-3	9-11	17-19	25-27	0	0 decimals
	4	12	20	28	1	Presented by the display element
	5	13	21	29		Spare
	6	14	22	30	1	Updated
	7	15	23	31	1	Signal error, value specified uncertain
	8	16	24	32	1	Alarm status

How to read the table is described in Figure 3-50.

It is normally only VALUE 6, 7 and 8 (14, 15 and 16 etc.) which are linked to the PC-program, other status flags are filled in with Advant Station 100 Series Engineering Stations.

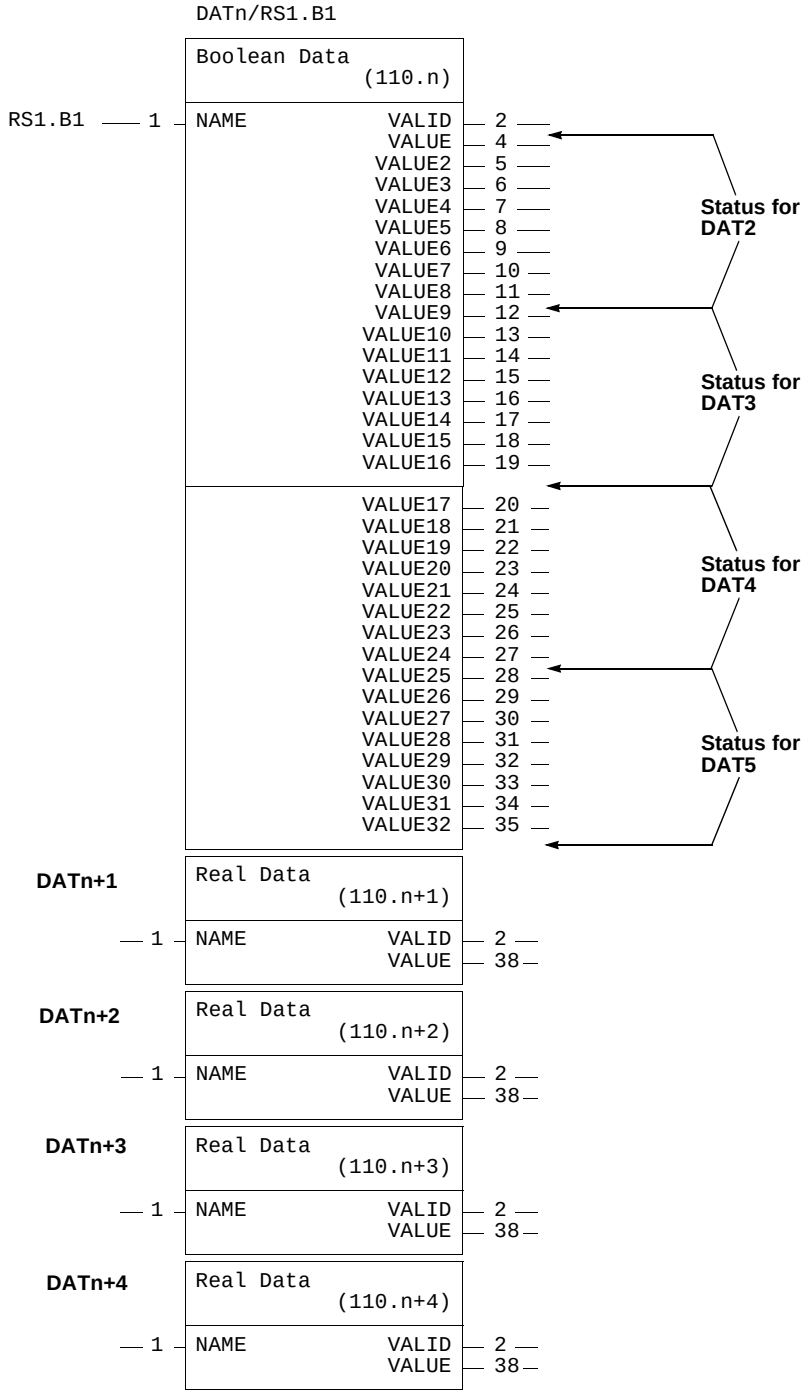
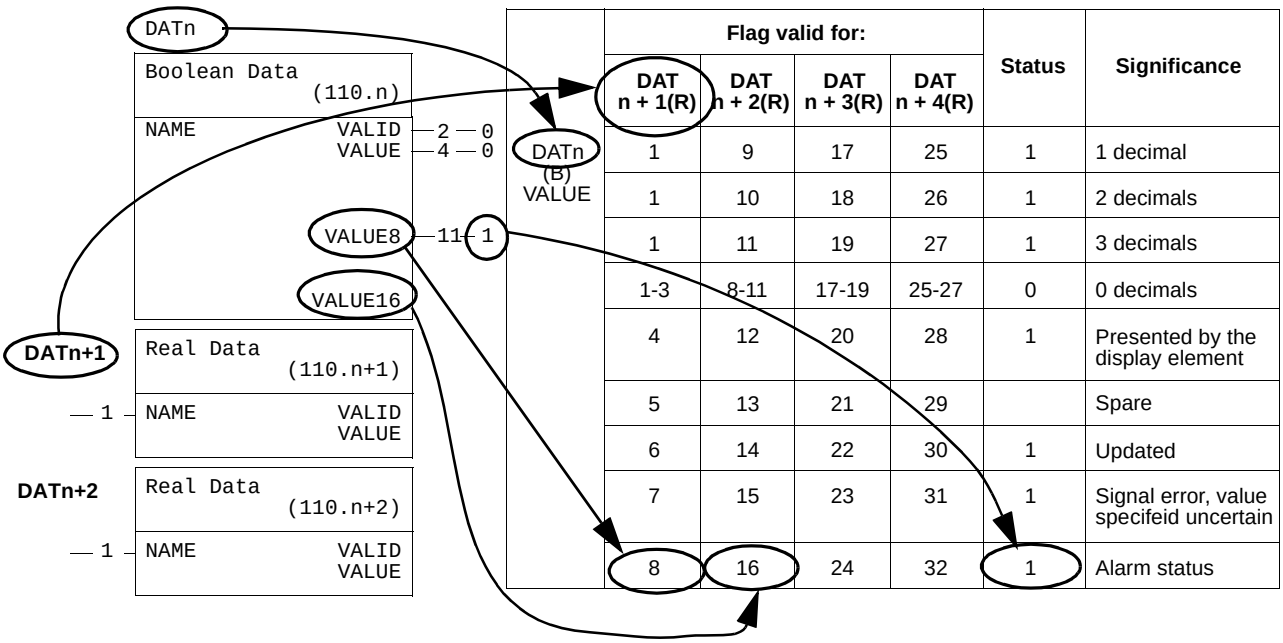


Figure 3-49. DAT element structure for Type 2



	Flag valid for:				Status	Significance
	DAT n + 1(R)	**DAT n + 2(R)**	**DAT n + 3(R)**	**DAT n + 4(R)**		
	1	9	17	25	1	1 decimal
	1	10	18	26	1	2 decimals
	1	11	19	27	1	3 decimals
	1-3	8-11	17-19	25-27	0	0 decimals
	4	12	20	28	1	Presented by the display element
	5	13	21	29		Spare
	6	14	22	30	1	Updated
	7	15	23	31	1	Signal error, value specifeid uncertain
	8	16	24	32	1	Alarm status

Figure 3-50. Connection between the DAT element and the status flags

Type 3

Consists of two blocks of type 2 and is utilized for the transfer of max. 8 real values.

DAT(B)
DAT(R)
DAT(R)
DAT(R)
DAT(R)
DAT(B)
DAT(R)
DAT(R)
DAT(R)
DAT(R)

Figure 3-51. DAT element structure for Type 3

Type 4

Consists of a DAT(IL) which gives the time to be presented on the report display. The time given in 0.1 ms from midnight (24:00).

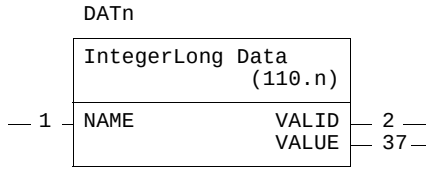


Figure 3-52. DAT element structure for Type 4

The first set is used for storage of the current report and the other for storage of the completed report. When all values are ready for printout, these values are copied from the report in pro–gress to be completed report before they are printed out. This procedure provides the possibility of presenting the completed report during the time the next report is calculated.

3.3.6.2 Request Printout

A report printout can be initiated either manually or automatically. The operator can request a report display on the display screen and obtain copying of the display on a hard copy unit in the usual way.

The PC element REPORT in a process station can be activated with the help of a timer or for example a DI signal. This gives printout of a hard copy or postscript of the report display, the name of which is given to the PC element.

3.3.6.3 Build a Report Display

A report display is built up in the same way as user defined process displays. The report values to be presented are assembled and accessed in a process station and in Information Management Stations. Data is presented with specially developed display elements. See the manual *AdvaCommand User Interface Reference Manual.*

Example

A report display with the following appearance is to be designed:

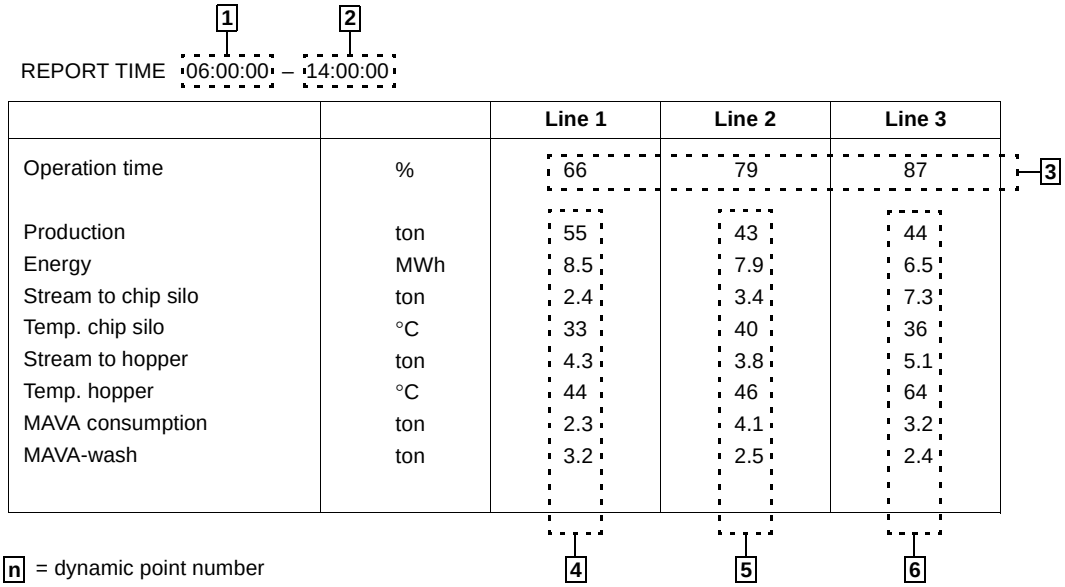


Figure 3-53. Example of report display

Note that the dynamic points **1** and **2** are time indications. The display element DATPD03 is suitable for these points if you change the parameter UnitsPerSecond to 1. The display element REPPD04 gives 4 real values in a line which is suitable for the dynamic point **3**. The dynamic points **4**, **5** and **6** consists of 8 real values in columns and correspond to display element REPPD08.

It is first necessary to organize the consecutive DAT elements to suit the display element to which the report function corresponds. The DAT elements are described in the manual *AdvaCommand User Interface Reference Manual*.

The DAT elements are organized in three parts in accordance with the figure below:

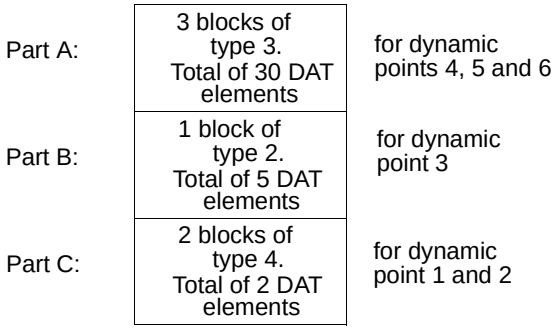

Part A:
3 blocks of type 3. Total of 30 DAT elements
for dynamic points 4, 5 and 6
Part B:
1 block of type 2. Total of 5 DAT elements
for dynamic point 3
Part C:
2 blocks of type 4. Total of 2 DAT elements
for dynamic point 1 and 2

Figure 3-54. Example of DAT elements for a report display

In part A, The DAT(B) elements have the names:

PRODUCTION1

PRODUCTION2

PRODUCTION3

In part B, The DAT(B) element has the name:

OPER_TIME

In part C, The DAT(IL) elements have the names:

REPORT TIME1

REPORT TIME2

DAT elements can be created now. These must, for each block, be in consecutive order in the data base to be included in the report display.

Connect the Advant Station 100 Series Engineering Station to the process station and follow the instructions on the screen.

Enter: **`CRDB DAT(B)`** **<CR>**

The DAT element is shown on the screen. Enter the parameters in accordance with the figure below. Check that the record designation of the element is, for example, DAT1.

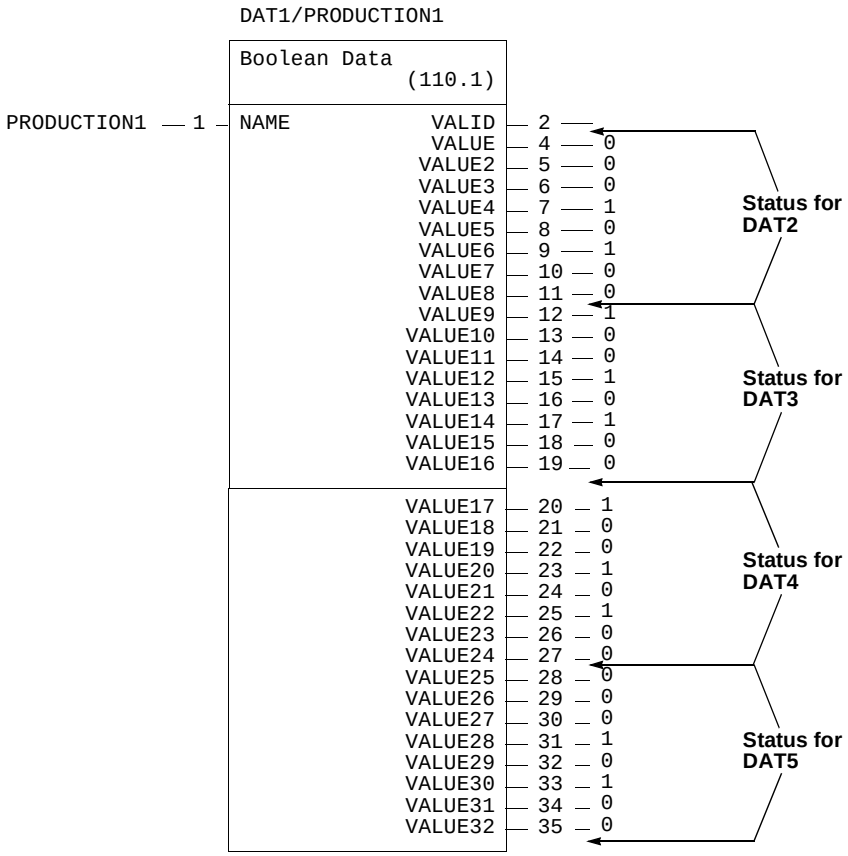


Figure 3-55. DAT1 element

CRDB DAT(R) [CR]

Check that the DAT element is located directly after the preceding DAT element, DAT2.

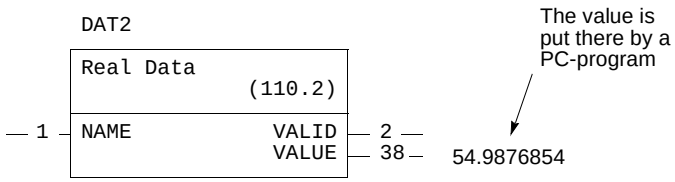


Figure 3-56. DAT2 element

Create the succeeding DAT element in the same way so that part A is given the following appearance:

DAT1–DAT5 is equal to dynamic point 4 in Figure 3-53.

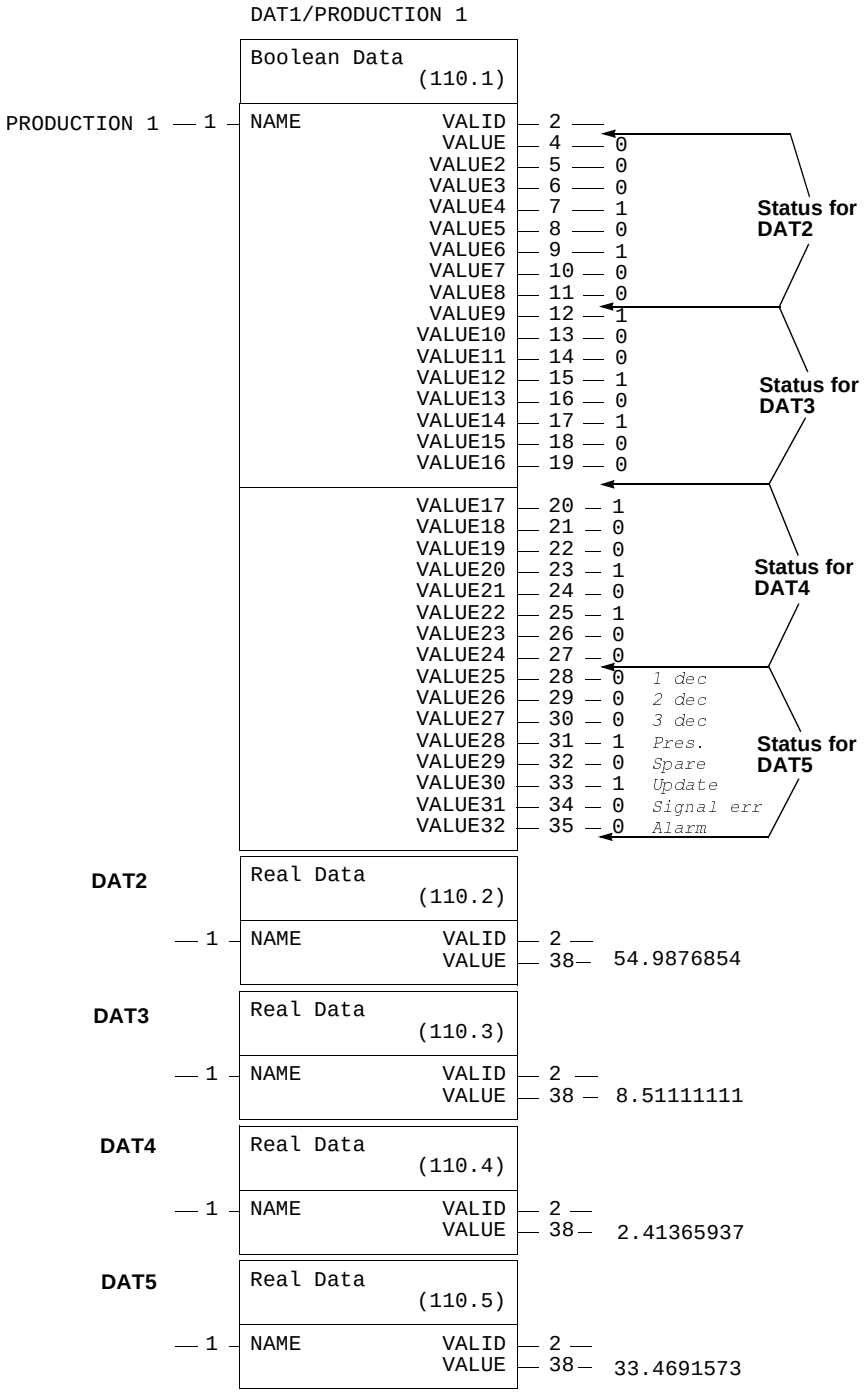

DAT1/PRODUCTION 1
Boolean Data
(110.1)
PRODUCTION 1 — 1 — NAME
VALID — 2 — 0
VALUE — 4 — 0
VALUE2 — 5 — 0
VALUE3 — 6 — 0
VALUE4 — 7 — 1
VALUE5 — 8 — 0
VALUE6 — 9 — 1
VALUE7 — 10 — 0
VALUE8 — 11 — 0
VALUE9 — 12 — 1
VALUE10 — 13 — 0
VALUE11 — 14 — 0
VALUE12 — 15 — 1
VALUE13 — 16 — 0
VALUE14 — 17 — 1
VALUE15 — 18 — 0
VALUE16 — 19 — 0
VALUE17 — 20 — 1
VALUE18 — 21 — 0
VALUE19 — 22 — 0
VALUE20 — 23 — 1
VALUE21 — 24 — 0
VALUE22 — 25 — 1
VALUE23 — 26 — 0
VALUE24 — 27 — 0
VALUE25 — 28 — 0 1 dec
VALUE26 — 29 — 0 2 dec
VALUE27 — 30 — 0 3 dec
VALUE28 — 31 — 1 Pres.
VALUE29 — 32 — 0 Spare
VALUE30 — 33 — 1 Update
VALUE31 — 34 — 0 Signal err
VALUE32 — 35 — 0 Alarm
Status for DAT2
Status for DAT3
Status for DAT4
Status for DAT5
DAT2
Real Data
(110.2)
— 1 — NAME
VALID — 2 —
VALUE — 38 — 54.9876854
DAT3
Real Data
(110.3)
— 1 — NAME
VALID — 2 —
VALUE — 38 — 8.51111111
DAT4
Real Data
(110.4)
— 1 — NAME
VALID — 2 —
VALUE — 38 — 2.41365937
DAT5
Real Data
(110.5)
— 1 — NAME
VALID — 2 —
VALUE — 38 — 33.4691573

Figure 3-57. Part A: DAT1 - DAT5

DAT6–DAT10 is equal to dynamic point 4 in Figure 3-53.

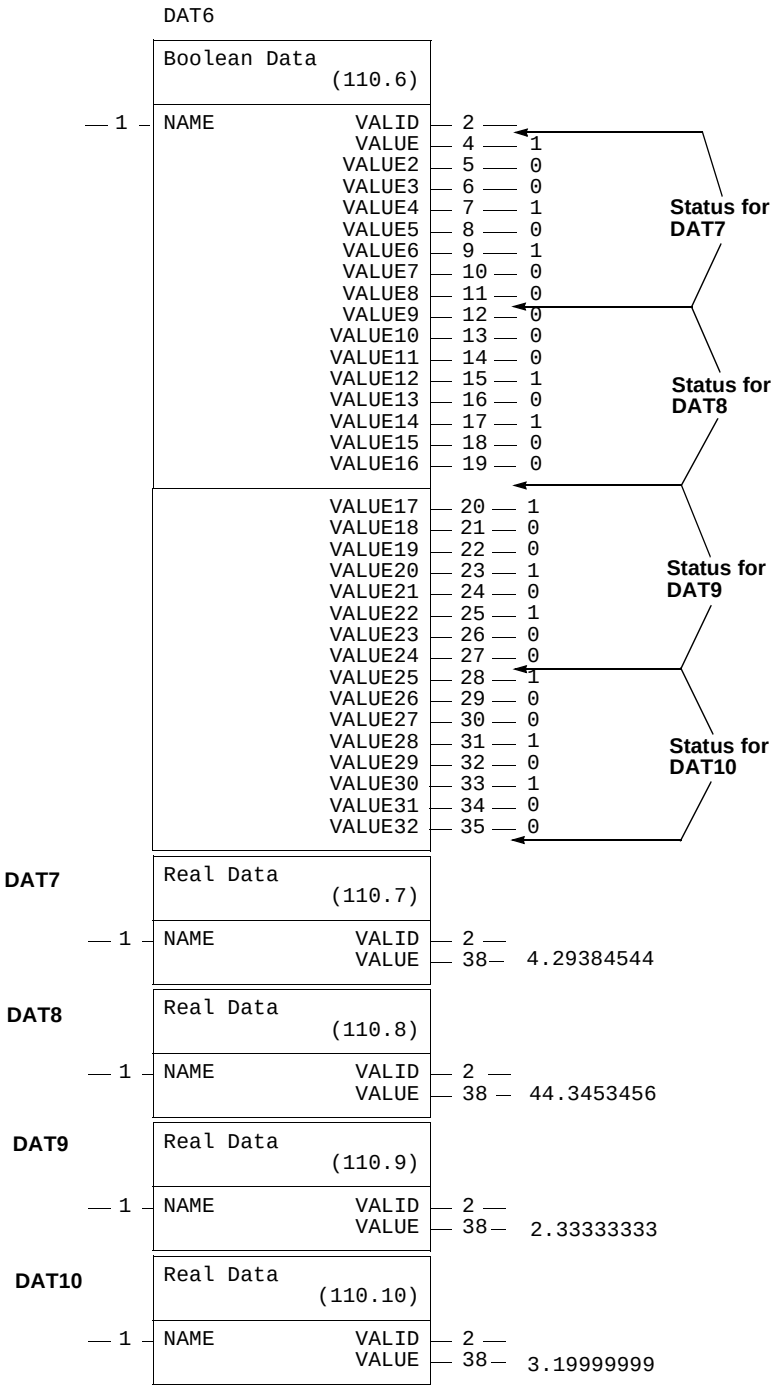


Figure 3-58. Part A: DAT6 - DAT10

DAT11–DAT15 is equal to dynamic point 5 in Figure 3-53.

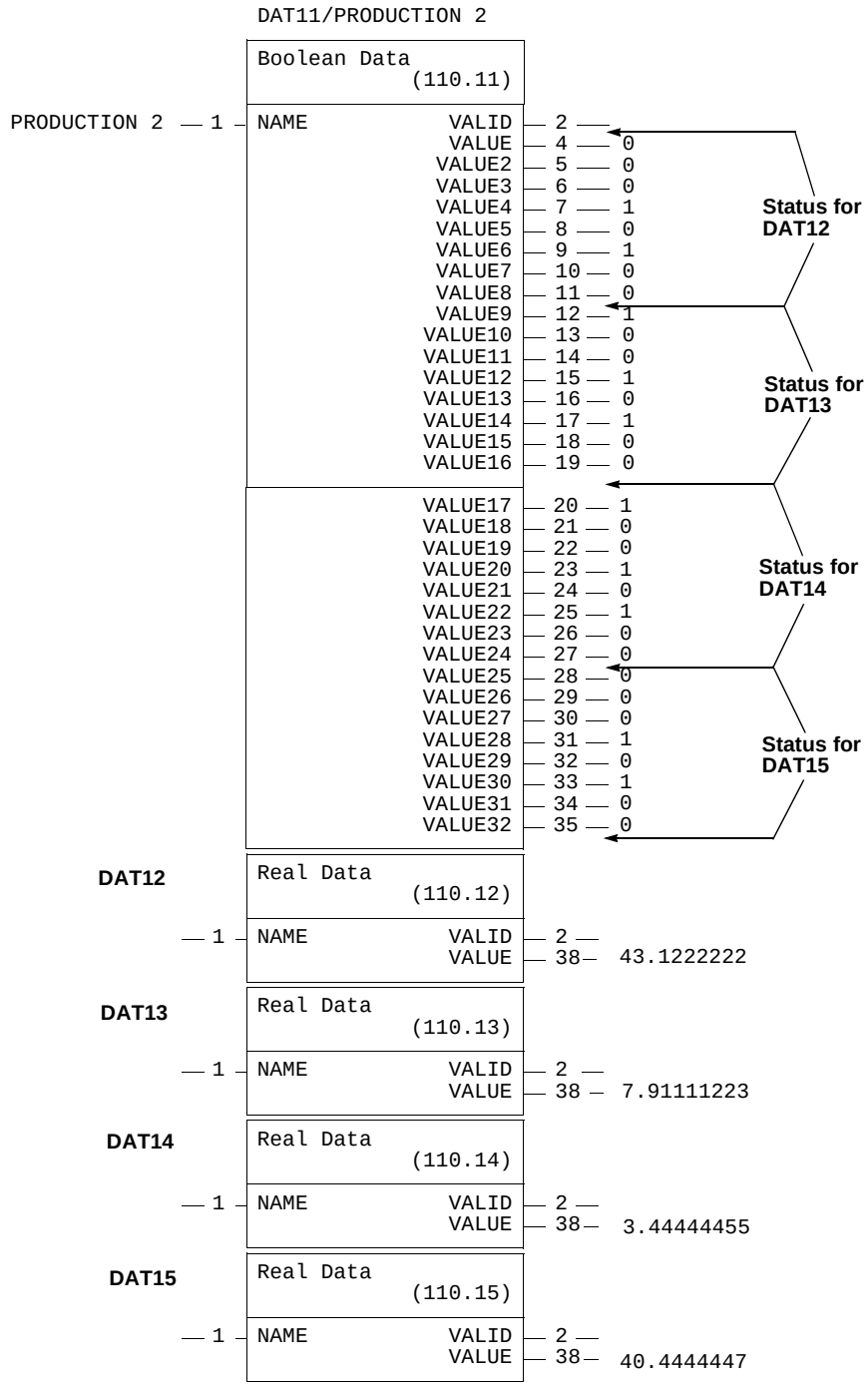


Figure 3-59. Part A: DAT11 - DAT15

DAT16–DAT20 is equal to dynamic point 5 in Figure 3-53.

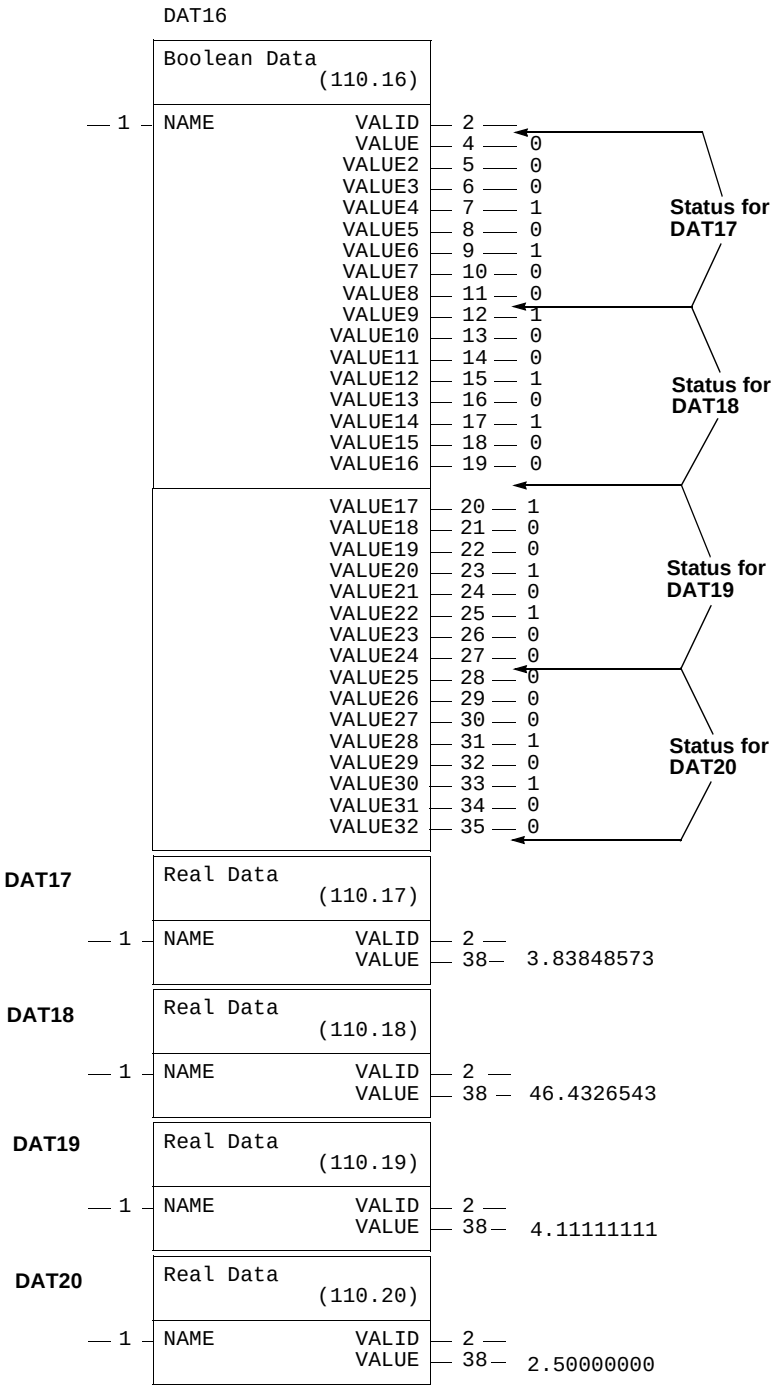


Figure 3-60. Part A: DAT16 - DAT20

DAT21–DAT25 is equal to dynamic point 4 in Figure 3-53.

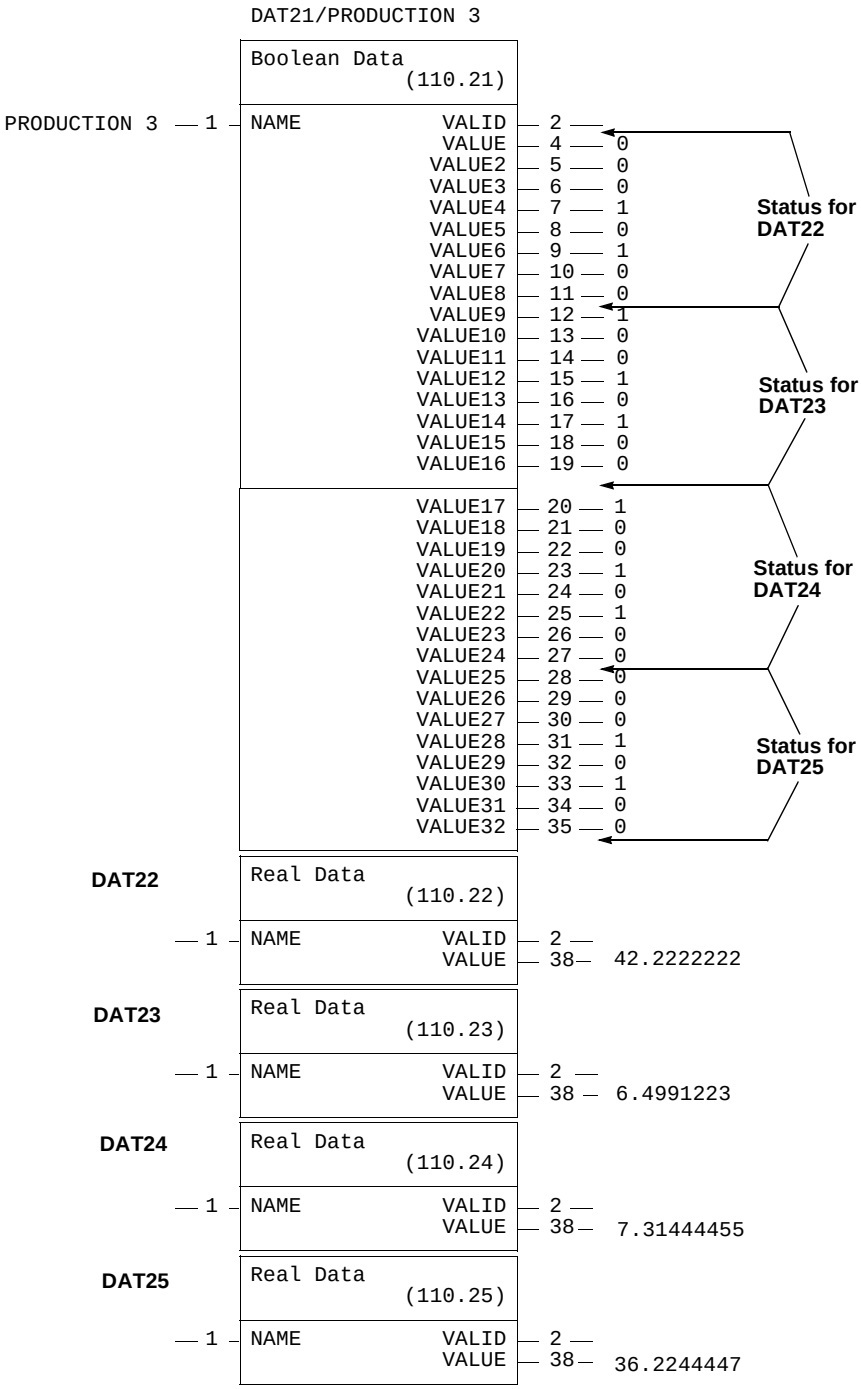


Figure 3-61. Part A: DAT21 - DAT25

DAT26–DAT30 is equal to dynamic point 5 in Figure 3-53.

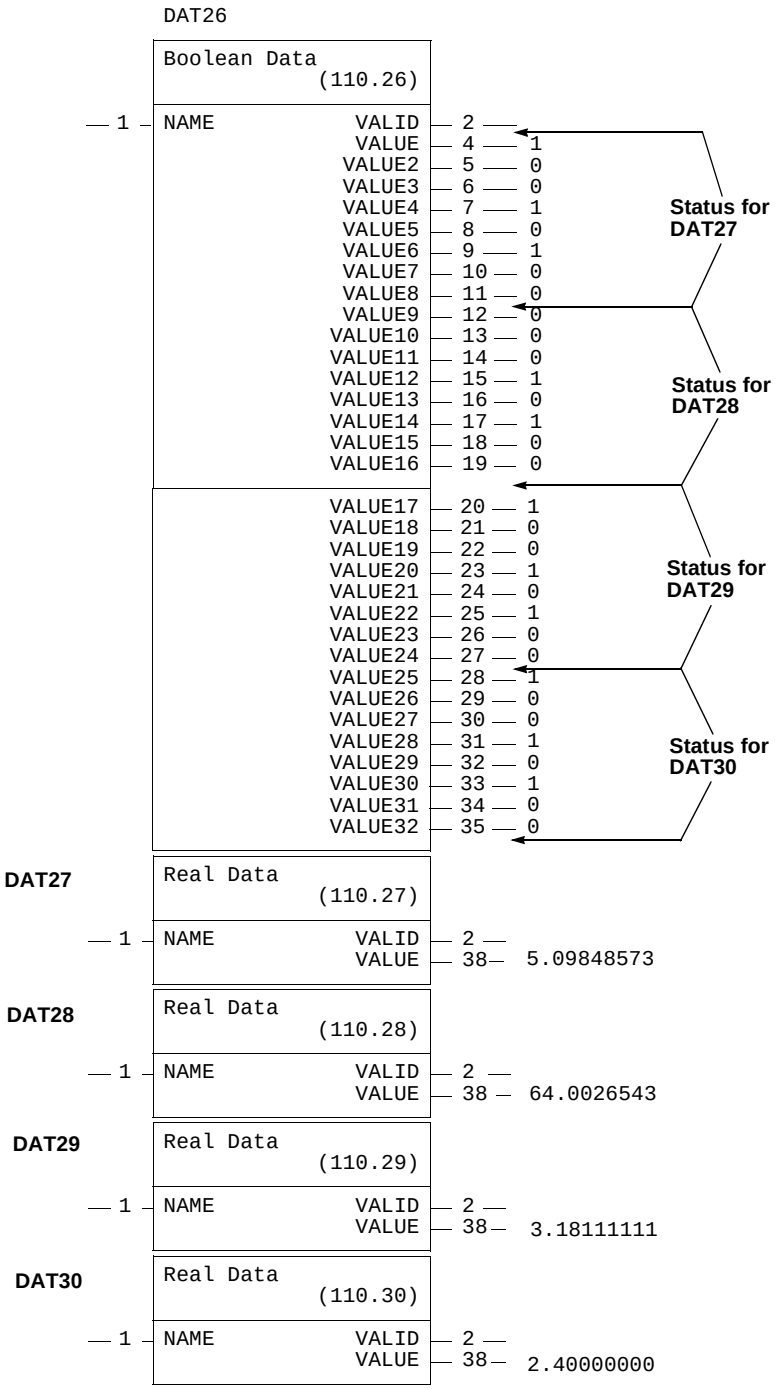
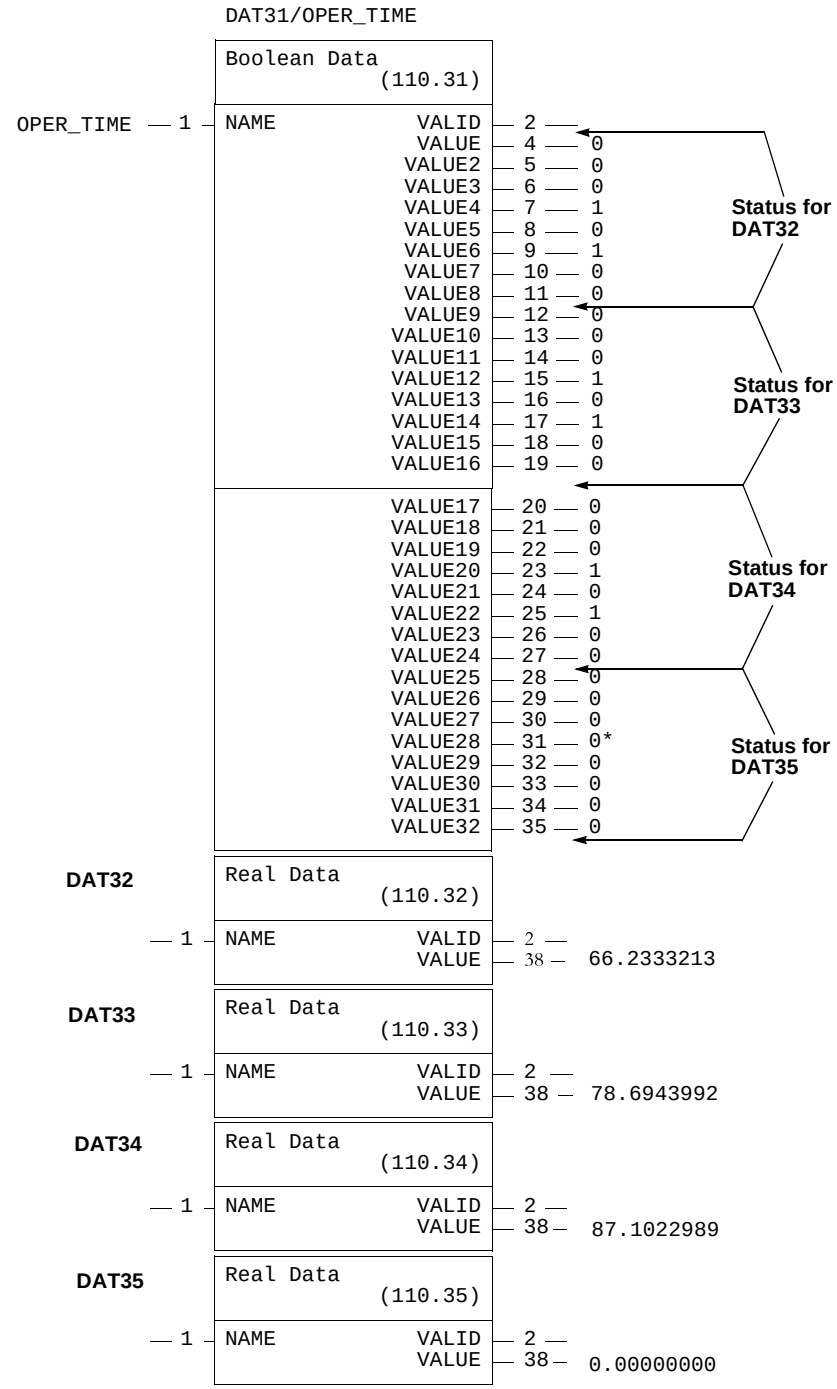


Figure 3-62. Part A: DAT26 - DAT30

DAT31–DAT35 is equal to dynamic point 3 in Figure 3-53.



* No value is to be presented. Cf Table 3-3.

Figure 3-63. Part A: DAT31 - DAT35

DAT36–DAT37 is equal to dynamic point 1 and 2 in Figure 3-53.

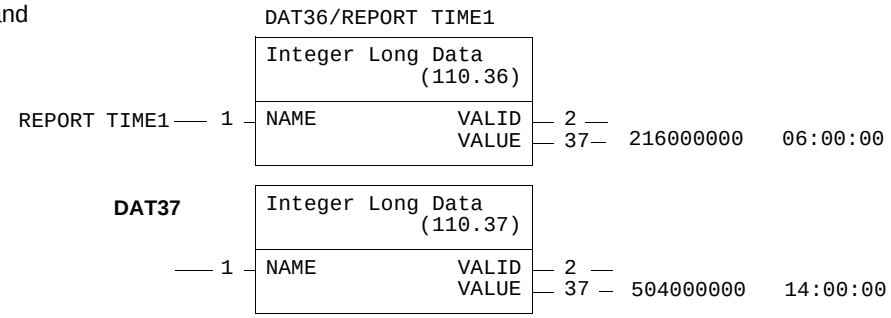


Figure 3-64. Part C: DAT36 - DAT37

If the status of (for example) DAT5 (see Figure 3-57) is studied it can be seen that the flags in DAT1 for VALUE25-27 are set to 0, that is no decimals are to be shown for the value. Neither alarm nor signal error is to be specified (VALUE31 and 32 in DAT1 is 0).

PC elements can be connected to the DAT element as follows:

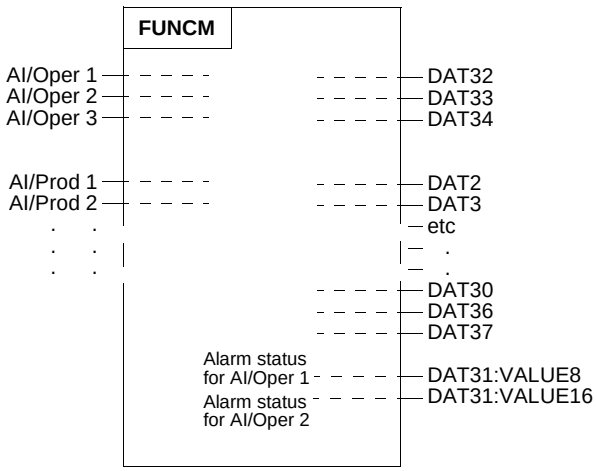


Figure 3-65. Connections of PC element to DAT element

Design the report display according to the manuals *AdvaCommand User Interface Reference Manual* and *AdvaBuild Display Builder User's Manual*.

NOTE

To build the display you need the software option Display Builder.

You enter the Display Builder and choose the suitable items in the Menu Bar.

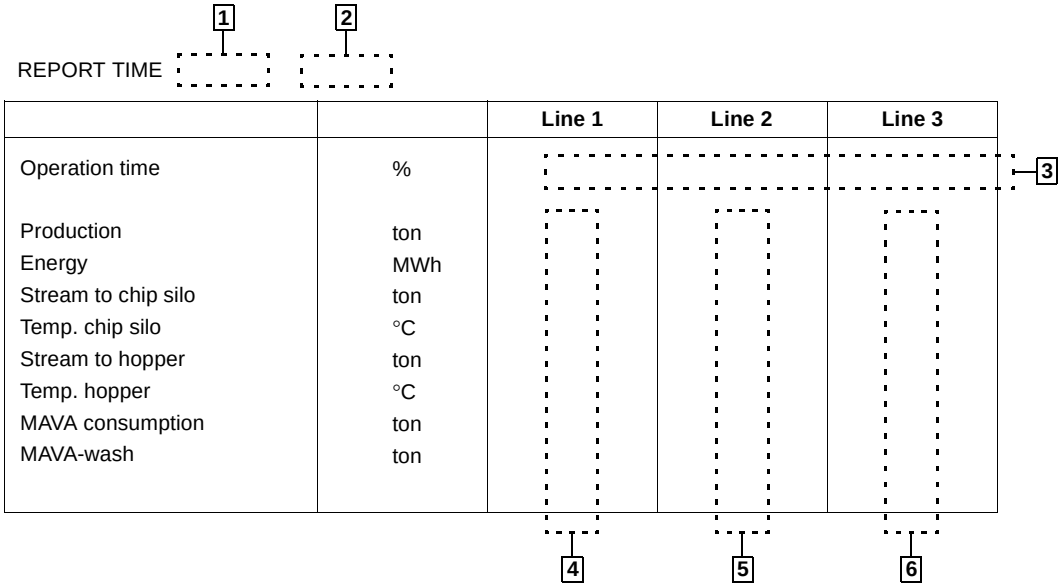


Figure 3-66. Static part of report display

The dynamic part is designed by choosing display elements from the display element palette and placing them on respective place.

Choose **Attribute** under the menu **Tools** in the Display Builder and enter for dynamic point 1:

Object Name	REPORT TIME1
Update	Demand
Dialog	nil

Enter for the other points:

Presentation

2. DATPD03 REPORT_TIME2, Demand, nil
3. REPPD04 OPER_TIME, Demand, nil (VerticalPresentation = False)
4. REPPD08 PRODUCTION1, Demand, nil (VerticalPresentation = True)
5. REPPD08 PRODUCTION2, Demand, nil (VerticalPresentation = True)
6. REPPD08 PRODUCTION3, Demand, nil (VerticalPresentation = True)

Continue the display design with display installation.

If automatic report printouts are required, the PC-program is supplemented with a REPORT element.

If printouts are required at a specific time, a TIMER element is also used. In the example below, a printout is obtained each day at 6.00 hrs and 14.00 hrs.

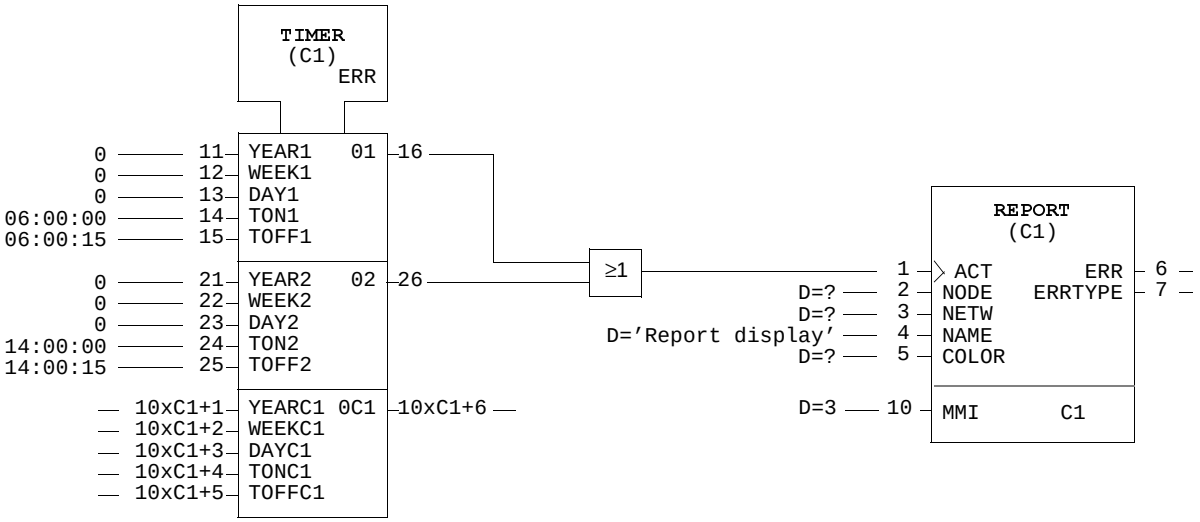


Figure 3-67. PC-function for automatic report printout

3.3.7 Text Editor

AdvaBuild…D7 Text Editor

You use the Text Editor to create and update text files, such as Object Lists for the Display Builder.

1. Press **F2** or click on the screen button D2 (AdvaBuild…) in the Configuration dialog.
2. Press **F7** or click on the screen button D7 (Text Editor).

   A standard text editor window (WordPad) is displayed. Its Menu Bar contains the following items:

   – File
   – Edit
   – View
   – Insert
   – Format
   – Help.

When you request printing of text files, they are queued to the default printer (see Section 3.3.10, Printer Configuration).

Using the Text Editor, you can make notebooks. Enter text such as remarks, messages, etc., and save and name the file, for example, "NoteBook". This file can then be read by others working with the operator station.

3.3.8 Date and Time

Settings…D1 Date and Time

You use this function to set the date and time in the operator station and/or in the control network.

1. Press **F6** or click on the screen button D6 (Settings…) in the configuration dialog.
2. Press **F1** or click on the screen button D1 (Date and Time).

The following dialog box is presented:

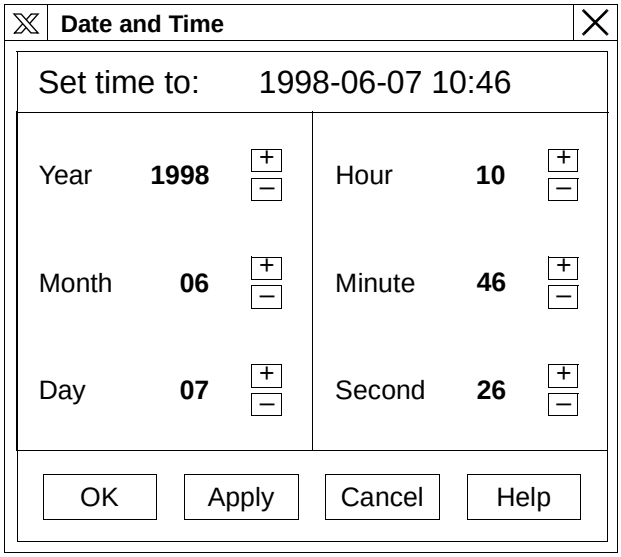


Figure 3-68. Dialog box for configuration of date and time

Six parameters are configurable, that is **Year**, **Month**, **Day**, **Hour**, **Minute** and **Second**. Each of the parameters has **+** (plus) and **-** (minus) buttons connected to them. Use these buttons to set the date and time.

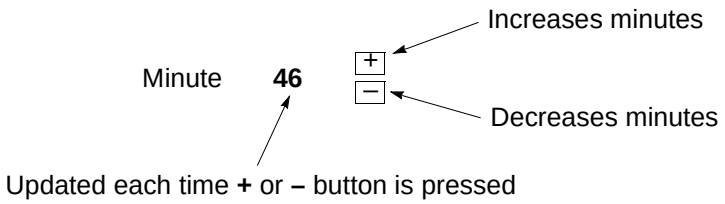


Figure 3-69. Example of how to set date and time

Every time you press the **+** (plus) button, the value to the left is increased by one, and every time you press the **-** (minus) button, the value is decreased by one. If you, for instance, press the **+** (plus) button for minutes and the value is 59, the value is changed to 0. Likewise, when the value is 0 and you press the **-** (minus) button, the value is set to 59. Note that the value of one time parameter does **not affect** any of the other parameter values. For example, changing the value in the **minute** example above from 59 to 0 does **not** change the hour value. Time changes due to standard time or daylight saving time are included in the parameter settings.

The dialog box features the following buttons:

OK

Sets the time to the configured time. The dialog box is closed.

Apply

Sets the time to the configured time.

Cancel

The time is **NOT** set. The dialog box is closed.

Help

Gives you brief help information about what the Date and Time configuration tool is and how to use it.

3.3.9 Station Settings

Settings…D2 Station Settings

1. Press **F6** or click on the screen button D6 (Settings...) in the configuration dialog.
2. Press **F2** or click on the screen button D2 (Station Settings).

The following dialog box is displayed:

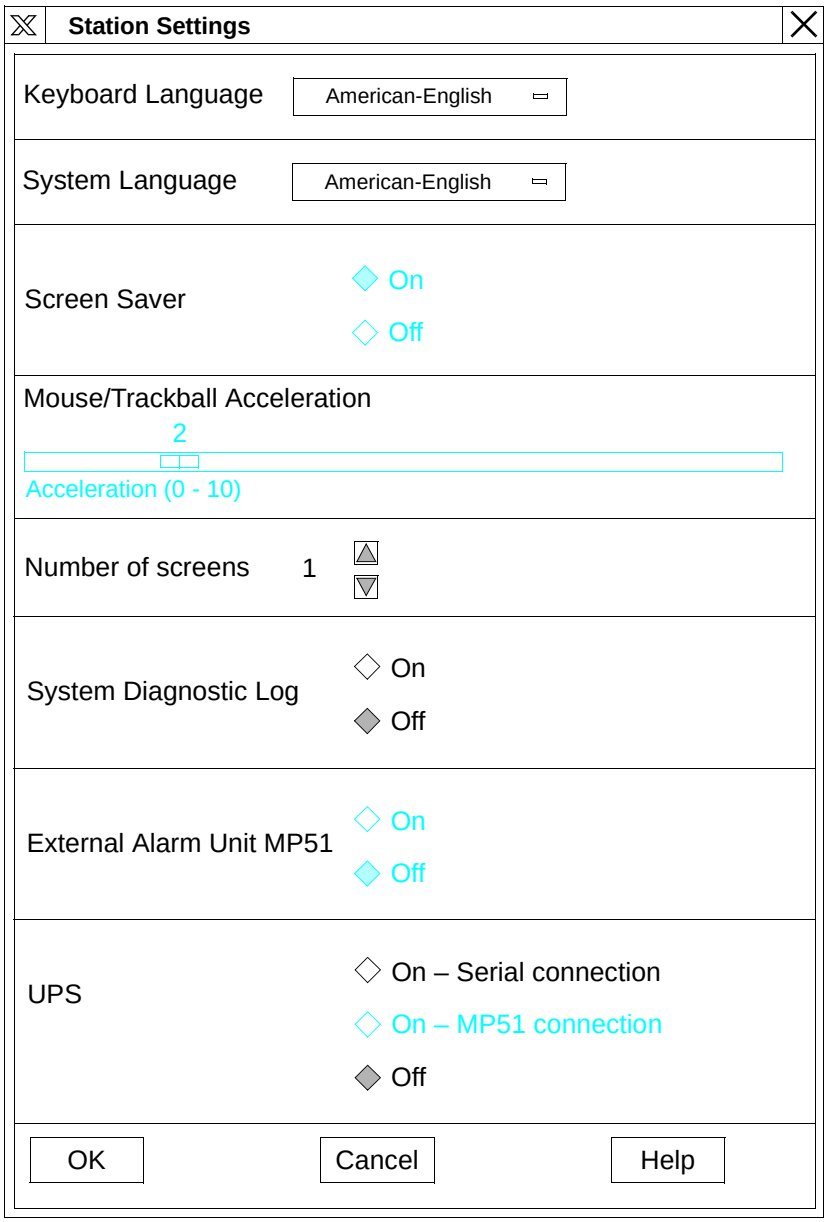


Figure 3-70. Dialog box for station settings

The current station settings are presented and can be changed.

Keyboard Language

The languages correspond to the three different language versions of the operator keyboard:

- American-English
- Swedish
- German

You choose the keyboard language using the **option** menu.

You must make a Function Restart (see Section 3.3.1, Function Restart) to make this change take effect.

System Language

The languages correspond to the three different language versions of the system:

- American-English
- Swedish
- German

You choose the system language using the **option** menu.

You must make a Function Restart (see Section 3.3.1, Function Restart) to make this change take effect.

Screen Saver

Not used. Use the standard settings for Windows NT instead.

Mouse/Trackball Acceleration

Not used. Use the standard settings for Windows NT instead.

Number of screens

Not used.

System Diagnostic Log

Click on the **On** button if you want to activate the diagnostic log (for further information, see Section 5.4, Fault Finding and User Repair).

You must make a Function Restart (see Section 3.3.1, Function Restart) to make this change take effect.

External Alarm Unit MP51

Not used.

UPS

Click on the **On** button if you want to activate the Uninterruptible Power Supply (UPS).

You must make a Function Restart (see Section 3.3.1, Function Restart) to make this change take effect.

OK

Applies the settings to the station. The dialog box then closes.

Cancel

Closes the dialog box without applying the settings to the station. They remain as they were prior to displaying the dialog box.

Help

Explains how to set the station settings values.

3.3.10 Printer Configuration

Settings…D3 Printer Config.

In an OCS you can connect a printer locally to a PC Workstation or to any station connected to the TCP/IP network or a printer connected directly to the TCP/IP network. To use a printer connected on the network it has to be defined as a printer queue in the AdvaCommand for Windows NT's configuration of printers.

In AdvaCommand for Windows NT a printer queue can make use of a local, remote or network based printer. One physical printer can have more than one printer queue configured. See Example in Figure 3-71, Table 3-4 and Table 3-5.

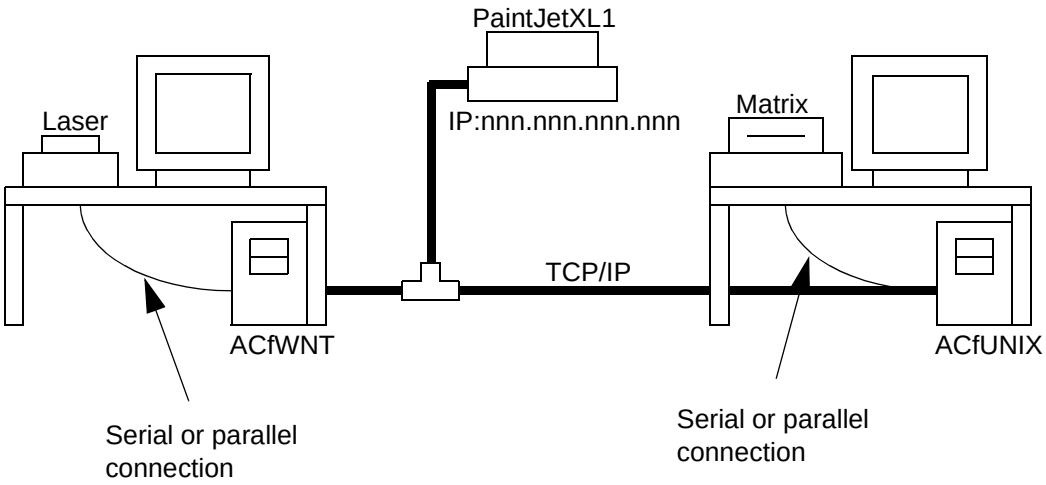


Figure 3-71. Example of a possible printer configuration

Table 3-4. Printer configuration for ACfWNT

Printer queue name	Remote printer queue name	Physical printer
ps	\\ACfWNT1\Laser	Laser on ACfWNT
Hardcopy	<not valid>	PaintJetXL1 on TCP/IP network
List	\\ACfWNT\Matrix	Matrix on ACfUNIX

The table shows that ACfWNT can use either a local, network or remote connected printer. AdvaCommand for Windows NT can use other UNIX and Windows NT station's printers, as remote printers. To reach other Windows NT station's printers the condition is that the printers are shared.

Table 3-5. Printer configuration for ACfUNIX

Printer queue name	Remote printer queue name	Physical printer
ps	<not valid>	PaintJetXL1 on TCP/IP network
Hardcopy	<not valid>	PaintJetXL1 on TCP/IP network
List	<not valid>	Matrix on ACfUNIX

3.3.10.1 How To Install Windows NT TCP/IP Printing Network Service

When printing to a remote printer that is connected to a UNIX station or to a printer that is connected directly to the TCP/IP network, a service called Microsoft TCP/IP Printing must be installed. That service gives all stations the possibility to add a local printer port that is a port to the TCP/IP adress. You need administrator's rights to restart the service.

Do as follows:

1. Select **Control Panel** from **Settings** in the **Start menu.**

   The Control Panel window is displayed.

2. Double-click on the **Network icon** to open the **Network** dialog box.

3. Select the **Services** tab.

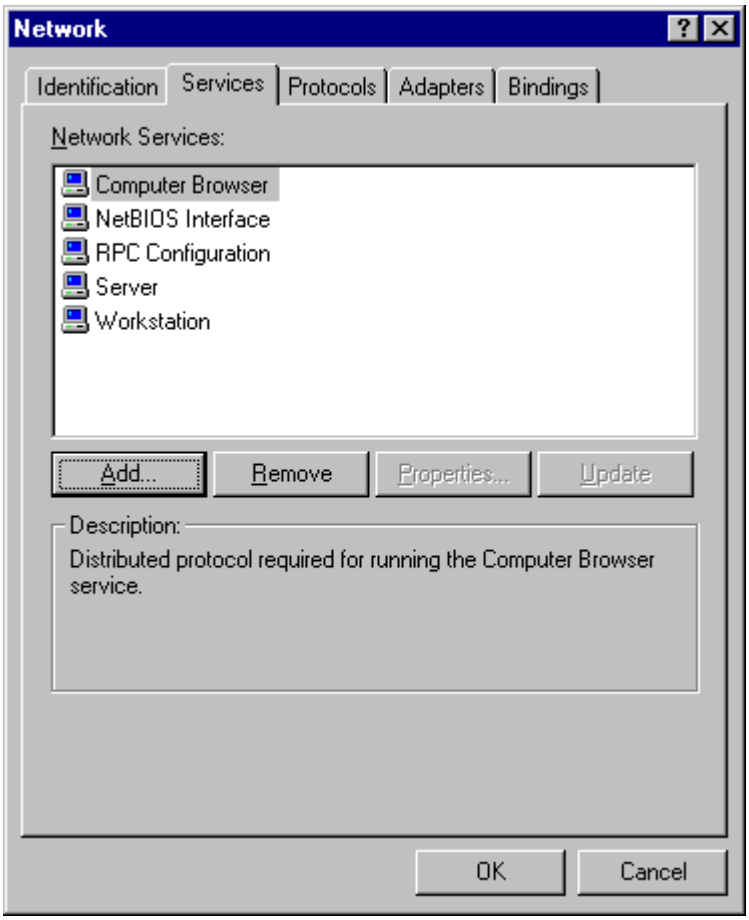


Figure 3-72. Network Services dialog without Microsoft TCP/IP Printing Services installed

4. Click on the **Add** button.

   The Select Network Service dialog box is displayed.

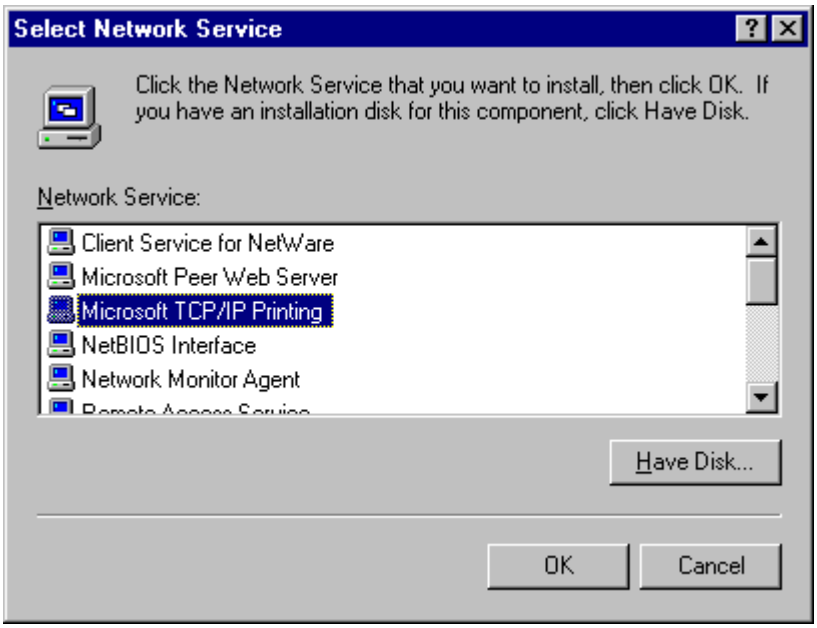

Select Network Service
Click the Network Service that you want to install, then click OK. If you have an installation disk for this component, click Have Disk.
Network Service:
Client Service for NetWare
Microsoft Peer Web Server
Microsoft TCP/IP Printing
NetBIOS Interface
Network Monitor Agent
Have Disk...
OK
Cancel

Figure 3-73. Select Network Service dialog box

5. Select Microsoft TCP/IP Printing service and click on the **OK** button.

   The Microsoft TCP/IP Printing service files are copied from the Windows NT CD-ROM to the local system directory.

   If the CD-ROM is not loaded, the following dialog box is displayed.

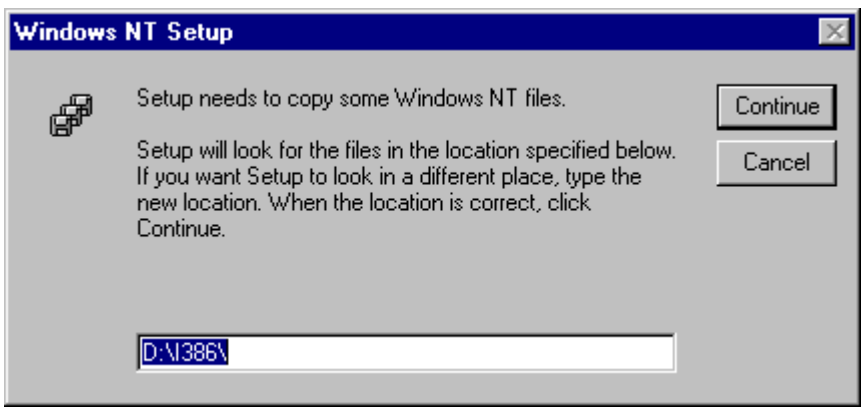

Windows NT Setup
Setup needs to copy some Windows NT files.
Setup will look for the files in the location specified below. If you want Setup to look in a different place, type the new location. When the location is correct, click Continue.
Continue
Cancel
D:\I386\

Figure 3-74. Insert CD-ROM information box during Window NT setup

If so, insert the CD-ROM and click on the **Continue** button.

When all files have been copied to the local system directory, the Network Services dialog box will appear with the new service installed, see Figure 3-75.

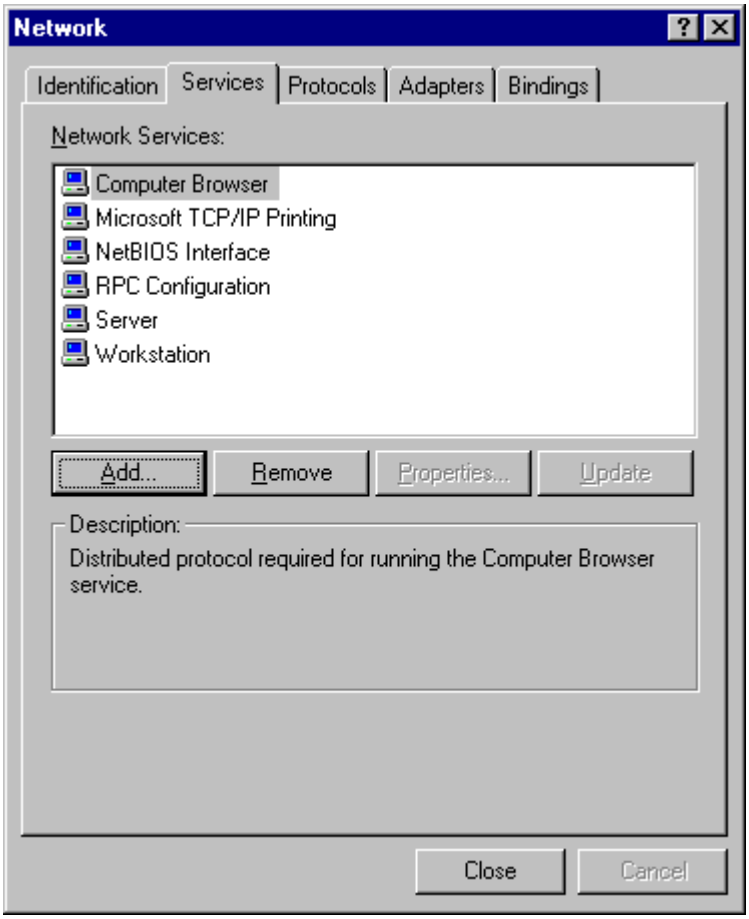


Figure 3-75. Network Services dialog with Microsoft TCP/IP service installed

6. Click on the **Close** button.

   An information box, where the system ask for a reboot, is displayed.

7. Close down all applications that are still open and reboot Windows NT manually before adding any TCP/IP port.

3.3.10.2 Installing TCP/IP Printer Port and Printer

When the Microsoft TCP/IP Printing Network Service is installed and the station is rebooted, it is possible to install a TCP/IP printer port and printer. You need administrator's rights to restart the service.

Do as follows:

1. Select **Control Panel** from **Settings** in the **Start menu.**

   The Control Panel window is displayed.

2. Double-click on the **Printers icon** to open the **Printers** dialog box.

3. Double-click on the **Add Printer icon**.

   The Add Printer Wizard is displayed. The Wizard opens with the dialog box in Figure 3-76.

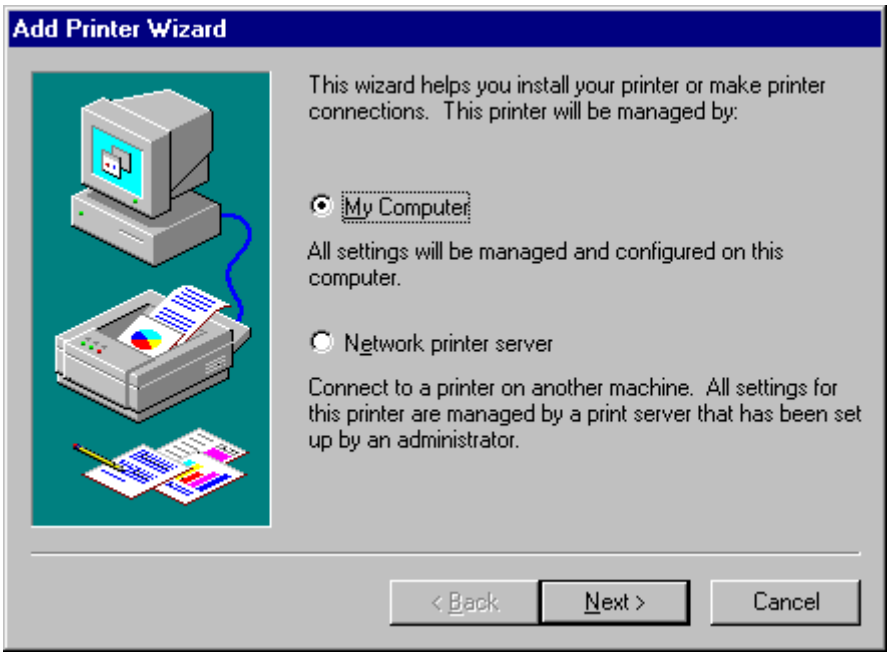

Add Printer Wizard
This wizard helps you install your printer or make printer connections. This printer will be managed by:
My Computer
All settings will be managed and configured on this computer.
Network printer server
Connect to a printer on another machine. All settings for this printer are managed by a print server that has been set up by an administrator.
< Back
Next >
Cancel

Figure 3-76. Add Printer Wizard - Opening dialog box

4. Click on the **Next** button.

The next dialog box with the available printer ports is displayed.

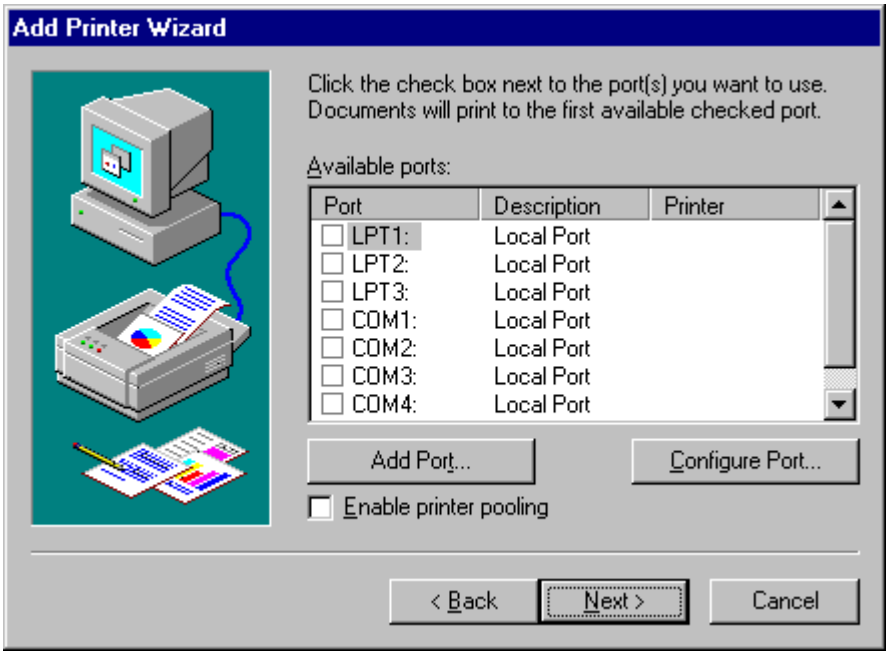


Figure 3-77. Add Printer Wizard - Available ports dialog box

5. Select the port and click on the **Add Port** button.

   The Printer Ports dialog box is displayed.

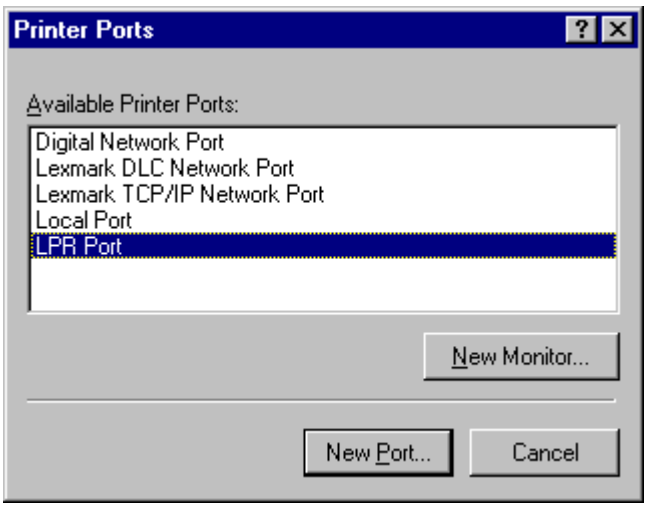


Figure 3-78. Printer Ports dialog box

6. Choose **LPR Port** and click on the **New Port** button.
7. The **Add LPR compatible printer** dialog box is displayed.

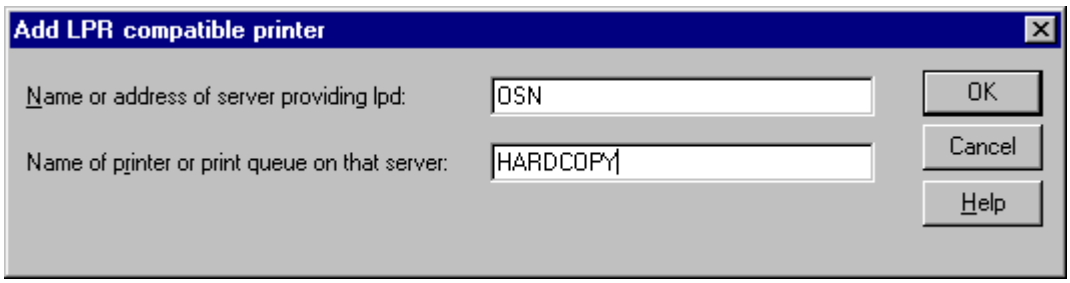


Figure 3-79. Add LPR compatible printer dialog box - With UNIX lpd providing server

8. Enter the names of the UNIX station and the printer that is to be connected to it in the two entry fields, alternatively type the IP adress of the printer that is connected directly to the network.

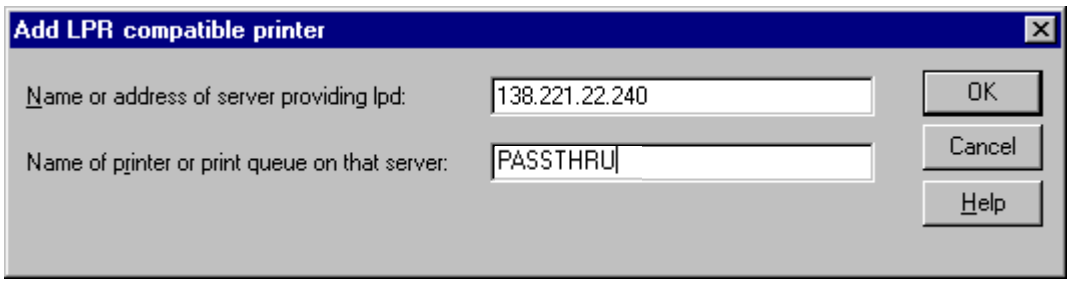


Figure 3-80. Add LPR compatible printer dialog box - With TCP/IP connected network printer

The printer queue name on those printers is most often PASSTHRU.

9. Click on the **OK** button.

   The dialog box with the available printer ports is displayed again, but now it includes the printer port that you added in point 5-8.

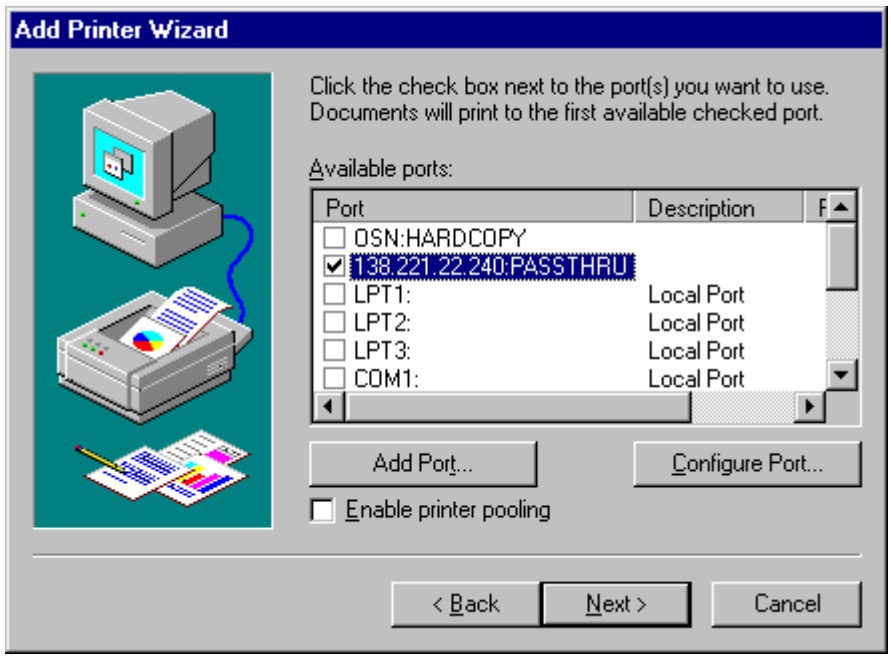


Figure 3-81. Add printer Wizard - Dialog box with the new port configured

10. Click on the **Next** button.

The next dialog box with the available printer models is displayed.

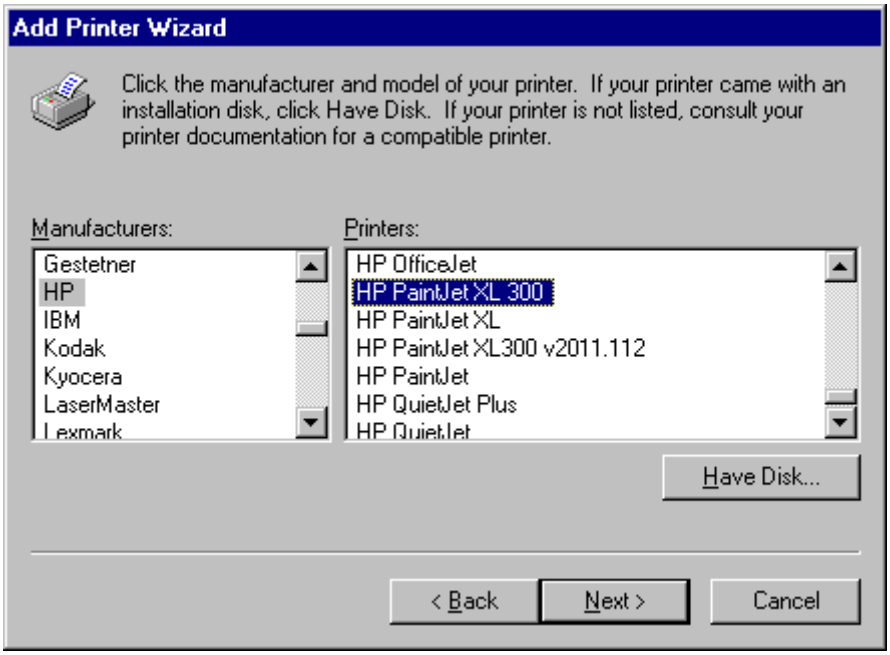


Figure 3-82. Add printer Wizard - Dialog box with printer model dialog

11. Choose your printer model and click on the **Next** button to display a confirmation box.

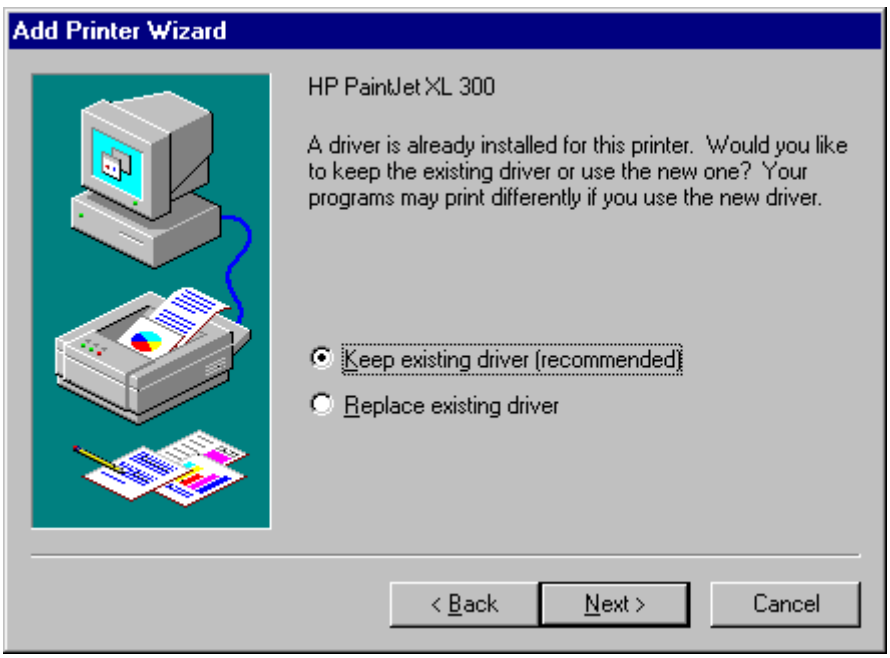

Add Printer Wizard
HP PaintJet XL 300
A driver is already installed for this printer. Would you like to keep the existing driver or use the new one? Your programs may print differently if you use the new driver.
Keep existing driver (recommended)
Replace existing driver
< Back
Next >
Cancel

Figure 3-83. Add Printer Wizard - Dialog box when the driver already exists

You can either keep or replace the existing driver.

– If driver already exists, select **Keep existing driver (recommended)** and click on the **Next** button.

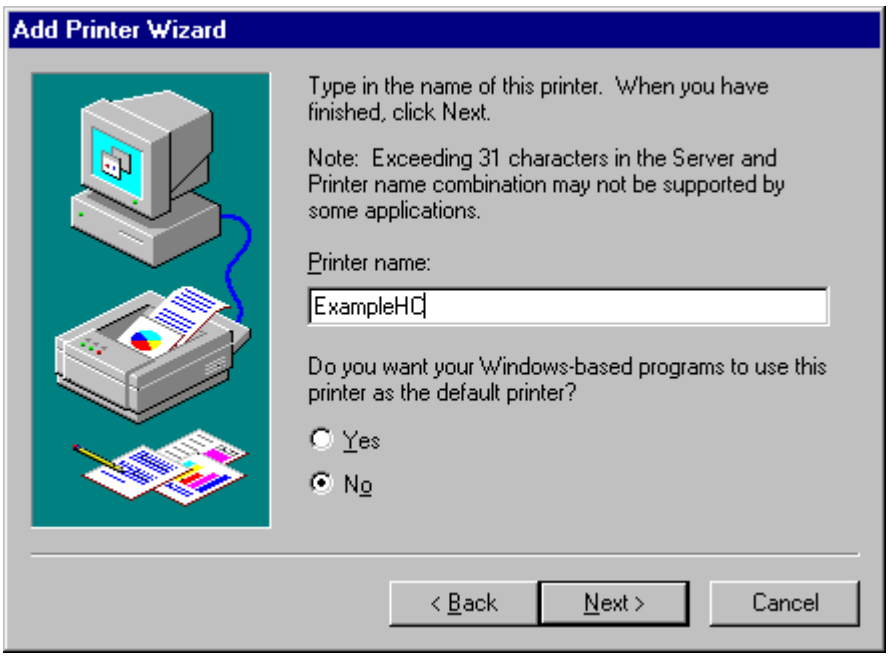

Add Printer Wizard
Type in the name of this printer. When you have finished, click Next.
Note: Exceeding 31 characters in the Server and Printer name combination may not be supported by some applications.
Printer name:
ExampleHC
Do you want your Windows-based programs to use this printer as the default printer?
Yes
No
< Back
Next >
Cancel

Figure 3-84. Add Printer Wizard - Name dialog box

– If you want to replace the driver, select **Replace existing driver** and click on the **Next** button.

The next dialog box is displayed, where you decide whether the printer is to be shared or not as well as selecting the allowed operating systems of the computers that will be using the printer.

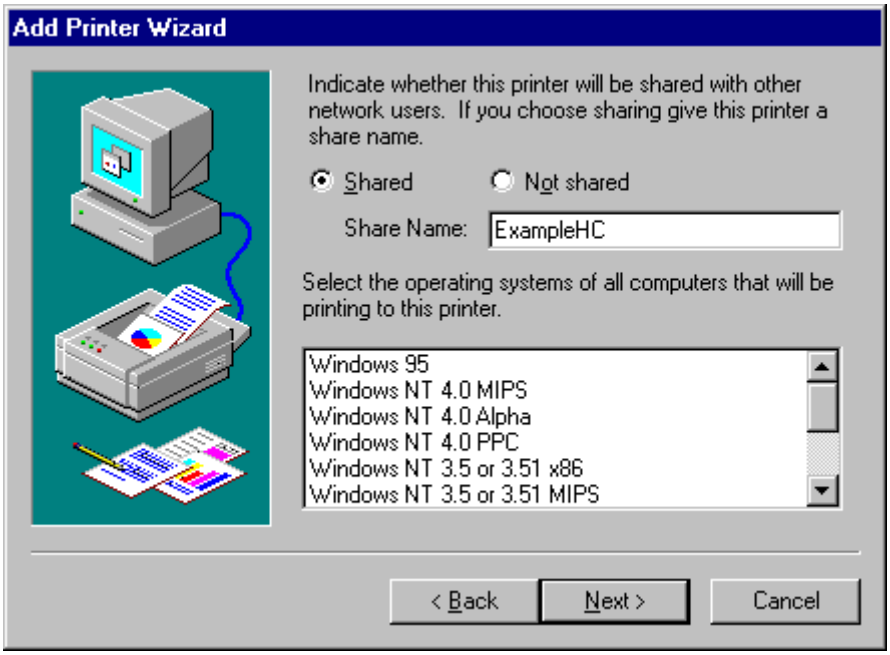

Add Printer Wizard
Indicate whether this printer will be shared with other network users. If you choose sharing give this printer a share name.
Shared
Not shared
Share Name:
ExampleHC
Select the operating systems of all computers that will be printing to this printer.
Windows 95
Windows NT 4.0 MIPS
Windows NT 4.0 Alpha
Windows NT 4.0 PPC
Windows NT 3.5 or 3.51 x86
Windows NT 3.5 or 3.51 MIPS
< Back
Next >
Cancel

Figure 3-85. Add Printer Wizard - Sharing dialog box

Give the printer a proper share name (no longer name than 14 characters).

NOTE

The printer will not be visible for AdvaCommand for Windows NT if it is not shared, and it is the share name that AdvaCommand for Windows NT uses, so it is important to give a proper share name to the printer, but no longer than 14 characters.

12. Click on the **Next** button

    The final dialog box in the Add Printer Wizard is displayed.

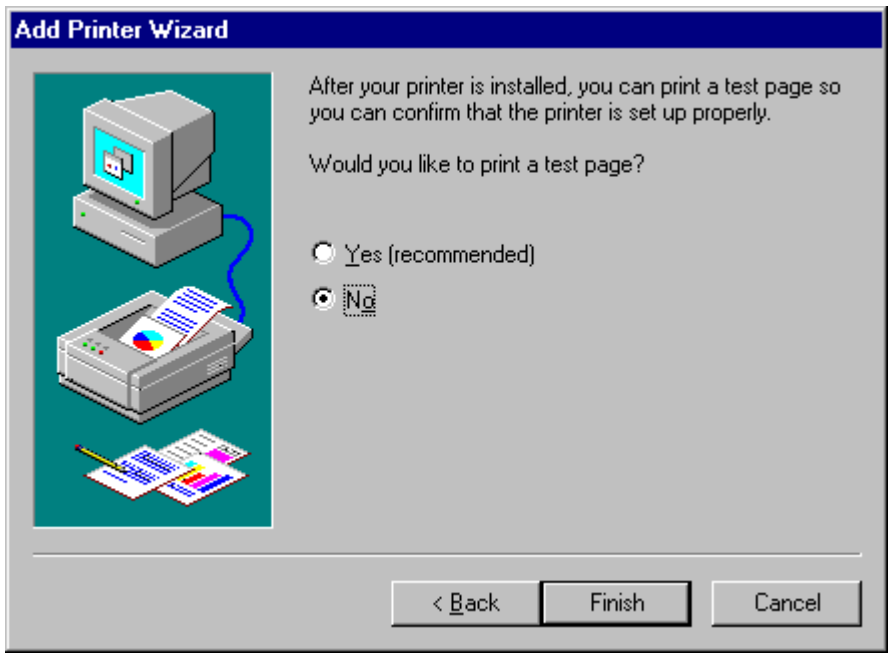

Add Printer Wizard
After your printer is installed, you can print a test page so you can confirm that the printer is set up properly.
Would you like to print a test page?
Yes (recommended)
No
< Back
Finish
Cancel

Figure 3-86. Add printer Wizard - Finish dialog box

A test page is not required, but to make sure that the configuration went well it is no danger to print a test page.

13. Select **Yes** or **No** and click on the **Finish** button to exit the Add Printer Wizard.

3.3.10.3 Printer Configuration Tool

When all local, remote printers to UNIX stations, and TCP/IP Network printers are configured into the Windows NT operating system, and all printers that shall be used in the AdvaCommand for Windows NT system are shared, they must be configured into the AdvaCommand for Windows NT with the Printer Configuration Tool.

3.3.10.4 Starting the Printer Configuration Tool

Do as follows:

1. Select the subitem **System Config** from the item System Display Keys in the pop-up menu Operation.
2. Press **F6** or click on the screen button D6 (Settings…)..
3. Press **F3** or click on the screen button D3 (Printer Config.).

   The main dialog box for the **Printer Configuration Tool** is displayed, see Figure 3-87.

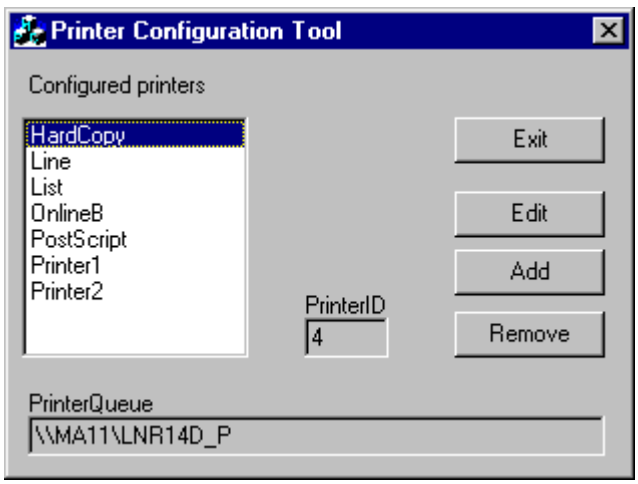


Figure 3-87. Printer Configuration Tool, main dialog

The main dialog box shows a list with configured printers, the printer queue and printer ID for a selected printer. It also contains the **Exit**, **Edit**, **Add** and **Remove** buttons.

3.3.10.5 Adding a Printer to the Printer Configuration

Do as follows:

1. Click on the **Add** button in the main dialog box for the **Printer Configuration Tool**.

   The **Add printer dialog** box is displayed, see Figure 3-88.

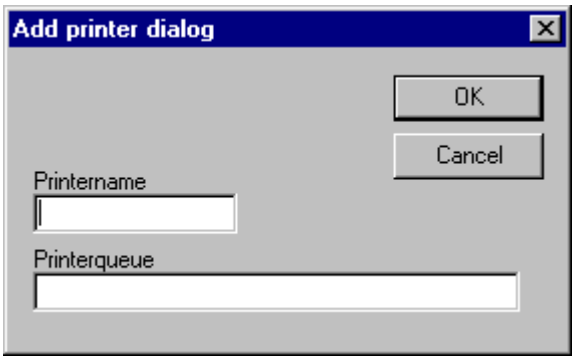


Figure 3-88. Add printer dialog box

2. Enter the printer and printer queue names in the two entry fields.

   The printer name can contain alpha-numerical letters, but no space-characters. No more than 14 characters are allowed.

   The printer queue shall have the format

   \\Computername\printersharename

   Only the share name will work. Even the local printers, such as all printers connected to the station with a parallel port, serial port or TCP/IP printer port must have the local computer's name first.

   Example 1:

   A computer PC1 have a printer named LaserJet connected with a parallel port. The printers share name is Shared1. The printer queue will be \\PC1\SHARED1 since the dialog only alows capital letters.

   – Printer name: LaserJet

   – Printer queue: \\PC1\SHARED1

Example 2:

The same computer have a UNIX connected LPD printer connected to a configured TCP/IP port. The UNIX station's name is OSN13, and in the UNIX station the printer is called Hardcopy. In the Windows NT operating system the printer has been named HC1, and shared with the name Shared2. The Printer queue will be \\PC1\SHARED2.

– Printer name: HC1

– Printer queue: \\PC1\SHARED2

3. Click on the **OK** button.

– If the printer share was found, an information box informs about that, and the new printer queue is stored in Printer Configuration for AdvaCommand for Windows NT.



Figure 3-89. Information box after a successful printer addition

Click on the **OK** button.

The information box is closed and the main dialog box for the Printer Configuration Tool is displayed again.

– If the printer name already exists, a dialog box asks if the name shall be overwritten.



Figure 3-90. Overwrite dialog box

If you want to overwrite the name, click on the **OK** button, if you want to keep the name, click on the **Cancel** button.

The dialog box is closed and the main dialog box for the Printer Configuration Tool is displayed again.

– If the printer share does not exist, an information box informs about that, and the printer queue will not be stored.



Figure 3-91. Network error information box

Click on the **OK** button.

The dialog box is closed and the main dialog box for the Printer Configuration Tool is displayed again.

3.3.10.6 Editing a Printer Configuration

If a printer share does not exist any more, but the printer must still exist in AdvaCommand for Windows NT, it is always possible to edit the printer configuration.

Do as follows:

1. Click on the **Edit** button in the main dialog box for the **Printer Configuration Tool**.

   The **Edit printer dialog** box is displayed, see Figure 3-92. The dialog box is similar to the Add printer dialog box, but the Printer name can not be changed.

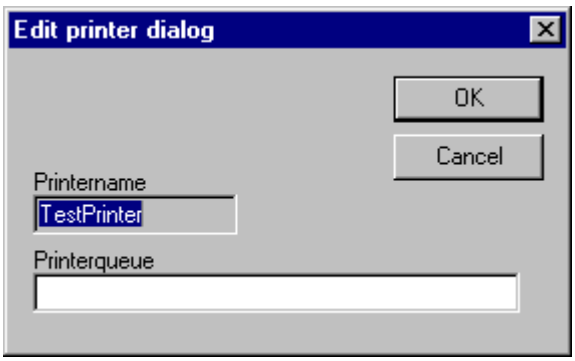


Figure 3-92. Edit printer dialog box

2. Enter the new printer share name into the printer queue entry field and click on the **OK** button.

   If the printer share name change is not successful, the same thing as in Section 3.3.10.5, Adding a Printer to the Printer Configuration, will happen.

3.3.10.7 Removing a Printer

When removing a configured printer from AdvaCommand for Windows NT, make sure that the printer is not used by any of AdvaCommand for Windows NT's subsystems. There is no danger in removing a printer that a subsystem uses, but the subsystem will not be able to print.

Do as follows:

1. Select the printer from the list of configured printers in the main dialog box for the **Printer Configuration Tool**.
2. Click on the **Remove** button.

   A confirmation dialog box, **Remove printer dialog,** is displayed.

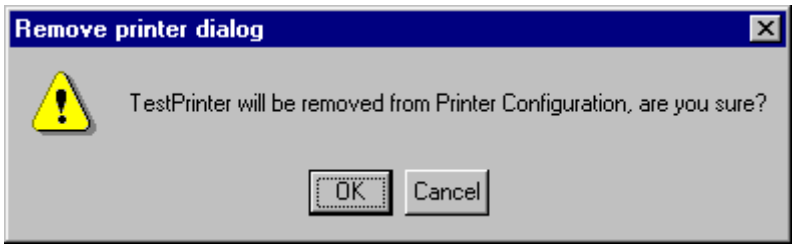


Figure 3-93. Remove printer dialog box

3. Click on the **OK** button to remove the printer from the Printer Configuration.

   The confirmation dialog box is closed and the main dialog box for the Printer Configuration Tool is displayed again.

   If you want to keep the name, click on the **Cancel** button. The confirmation dialog box is closed and the main dialog box for the Printer Configuration Tool is displayed again.

3.3.10.8 Exiting Printer Configuration Tool

Click on the **Exit** button to close the **Printer Configuration Tool**.

3.3.11 Hardcopy Configuration

Settings…D4 Hardcopy Config.

Use the Hardcopy Configuration function to define which printer queue(s) is to be used for hardcopy printouts and to set the options for the hardcopy printouts.

1. Press **F6** or click on the screen button D6 (Settings...) in the configuration dialog.
2. Press **F4** or click on the screen button D4 (Hardcopy Config.).

The following dialog box is displayed:

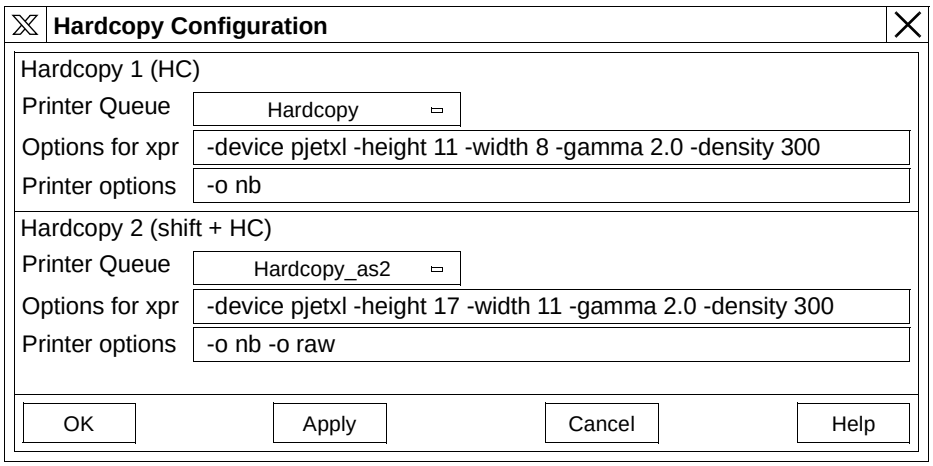


Figure 3-94. Dialog box for hardcopy configuration

The configuration tool is divided into two areas: Hardcopy 1 and Hardcopy 2. Settings for Hardcopy 1 are valid when you press the fixed key for hardcopy printouts. When you press both the **shift** key and the fixed key for hardcopy printouts, the settings for Hardcopy 2 are valid.

The current settings for Hardcopy 1 and Hardcopy 2 are presented and can be changed.

Printer Queue

Press the **Printer Queue** option button to present all available printer queues in the operator station. Select the printer queue that you want to use.

Press the **Apply** or **OK** button to store the selection in the system.

Options for xpr

xpr is an X-client that prints a screen dump. Depending on which type of printout or printer format you are using, some options for xpr can or must be changed. The changes are edited into this input field. The options are described below. If you are not using the standard hardcopy printer DSEP 510 and do not know how to set the xpr options, contact your printer supplier.

Default value for DSEP 510 is "-device pjetxl -height 11 -width 8 -gamma 2.0 -density 300".

Description of available xpr options:

- **device** *dev*

  Specifies the device type on which the file is to be printed. Device types currently supported by xpr are:

la100	Digital LA100
ljet	HP LaserJet series and other monochrome PCL devices such as ThinkJet, QuietJet, RuggedWriter, HP2560 series and HP2930 series printers
ln03	Digital LN03
pjet	HP PaintJet (color mode)
pjetxl	HP PaintJet XL Color Graphics Printer (color mode)
pp	IBM PP3812
ps	PostScript printer

  The default value is *pjetxl*.

- **height** *inches*

  Specifies the maximum height of the page in inches. Default value is *11* for A4 format. If you use the A3 format, change to *17* inches.

- **width** *inches*

  Specifies the maximum width of the page in inches. Default value is *8* for A4 format. If you use the A3 format, change to *11* inches.

- **left** *inches*

  Specifies the left margin in inches. Fractions are allowed. By default, the printout is centered in the page.

- **top** *inches*

  Specifies the top margin in inches. Fractions are allowed.

- **landscape**

  Forces the printout to be in landscape mode. By default, a printout is printed so that its longest side follows the long side of the paper.

- **portrait**

  Forces the printout to be in portrait mode. By default, a printout is printed so that its longest side follows the long side of the paper.

- **gray** *2 | 3 | 4*

  Uses a simple 2 x 2, 3 x 3 or 4 x 4 gray scale conversion on a color image, rather than mapping to strictly black and white. This doubles, triples, or quadruples the effective width and height of the image. This option is not supported for HP or IBM printers.

- **psfig**

  Suppresses translation of a PostScript printout to the center of the page.

- **density** *dpi*

  Indicates the dot-per-inch density to be used by the a printer. Default value is *300*.

  If this option is not specified, *300* dots per inch is assumed for ljet and *90* dots per inch is assumed for pjet. Allowed density values for LaserJet printers are *300, 150, 100,* and *75* dots per inch.

- **cutoff** *level*

  Changes the intensity level where colors are mapped to either black or white for monochrome output on a LaserJet printer. The level is expressed as a percentage of full brightness. Fractions are allowed.

- **gamma** *correction*

  Changes the intensity of the colors printed by a PaintJet XL printer. The correction is a floating point value in the range *0.00* to *3.00*. Consult the operator's manual to determine the correct value for the specific printer. Default value is *2.0*.

- **slide**

  Allows overhead transparencies to be printed using the PaintJet and PaintJet XL printers.

- **rv**

  Reverses black and white from the original screen. Note that this is only valid for pure black and white colors and not gray shades.

Press the **Apply** or **OK** button to store the xpr options in the system.

Printer options

Depending on which printer model you are using, some options for the printer can be changed. The changes are edited into this input field. The options are redirected to the printer model used for hardcopy printouts at a hardcopy request.

Default value for DSEP 510 is "-o nb".

Printer options must be preceded with -o. The printer model used for DSEP 510 accepts the following options:

- **nb**

  To save paper, no banner page is written for the printout.

- **raw**

  In raw mode, no interpretation is done on the data to be printed, and no page formatting is performed. Data bytes are simply sent to the printer and printed exactly as received.

Press the **Apply** or **OK** button to store the printer options in the system.

The dialog box features the following buttons:

OK

Applies the changes made in the dialog box. The dialog box is closed.

Apply

Applies the changes made in the dialog box.

Cancel

No changes are applied. The dialog box is closed.

Help

Gives you brief help information about what the Hardcopy Configuration tool is and how to use it.

3.3.12 Event and Alarm Handling

Event handling in operator stations includes detection and report of events, that is process events, process alarms, system events and system alarms. It also includes acknowledgment of alarms.

Events and alarms are presented in lists. The most recent unacknowledged process alarm is displayed in the upper portion of the screen. There is also a warning sign for unacknowledged system alarms in the screen header.

Using the function **Event Printer** (see Section 3.3.13, Event Printer) you define printers for alarms, events and system alarm.

If the AdvaCommand Process Sectioning option is installed you make the printer connection in the option instead. For more information about the AdvaCommand Process Sectioning option, please read the manual *AdvaCommand Process Sectioning*.

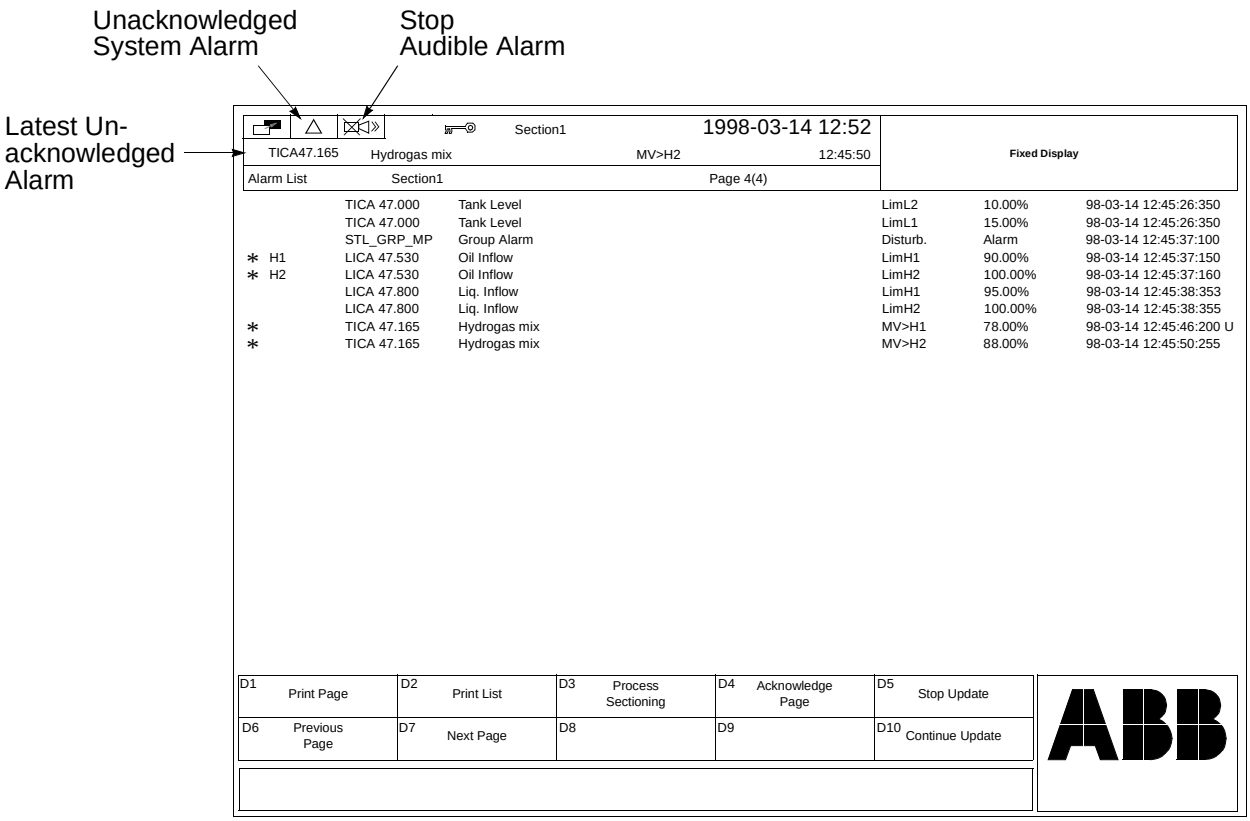

Unacknowledged System Alarm
Stop Audible Alarm
Latest Un-acknowledged Alarm
Section1
1998-03-14 12:52
TICA47.165 Hydrogas mix MV>H2 12:45:50
Fixed Display
Alarm List Section1 Page 4(4)
TICA 47.000 Tank Level LimL2 10.00% 98-03-14 12:45:26:350
TICA 47.000 Tank Level LimL1 15.00% 98-03-14 12:45:26:350
STL_GRP_MP Group Alarm Disturb. Alarm 98-03-14 12:45:37:100
* H1 LICA 47.530 Oil Inflow LimH1 90.00% 98-03-14 12:45:37:150
* H2 LICA 47.530 Oil Inflow LimH2 100.00% 98-03-14 12:45:37:160
LICA 47.800 Liq. Inflow LimH1 95.00% 98-03-14 12:45:38:353
LICA 47.800 Liq. Inflow LimH2 100.00% 98-03-14 12:45:38:355
* TICA 47.165 Hydrogas mix MV>H1 78.00% 98-03-14 12:45:46:200 U
* TICA 47.165 Hydrogas mix MV>H2 88.00% 98-03-14 12:45:50:255
D1 Print Page
D2 Print List
D3 Process Sectioning
D4 Acknowledge Page
D5 Stop Update
D6 Previous Page
D7 Next Page
D8
D9
D10 Continue Update

Figure 3-95. Alarm list

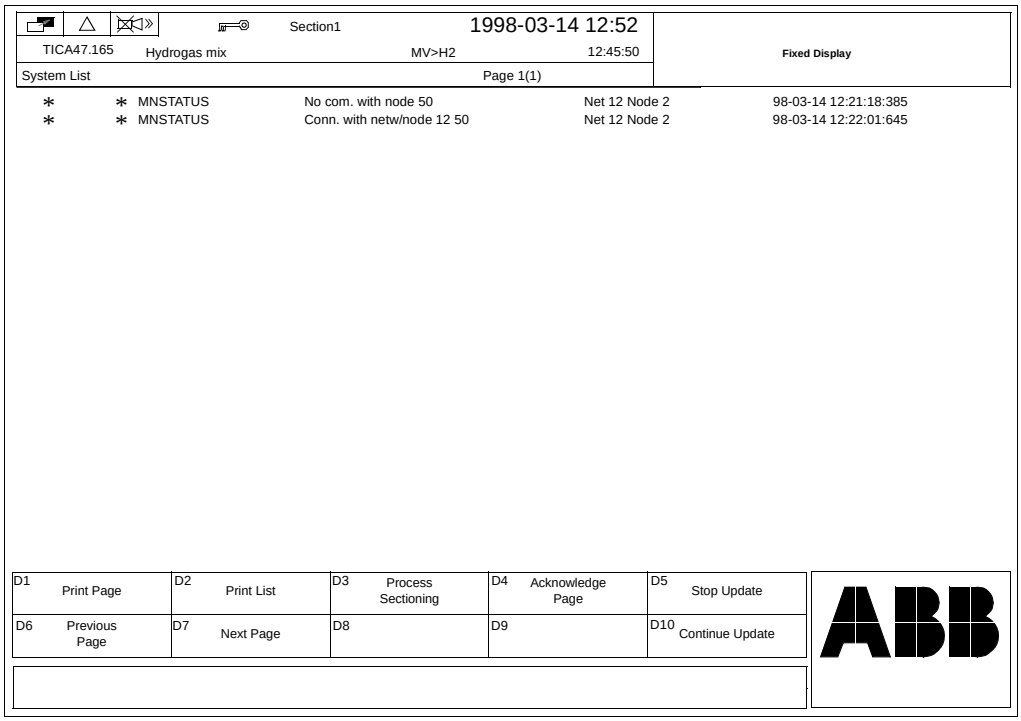


Figure 3-96. System list

When an event occurs it is analyzed in the Process Station/IMS. As a result of that an information package is sent to the operator station. There the presentation is made according to the event treatment specified.

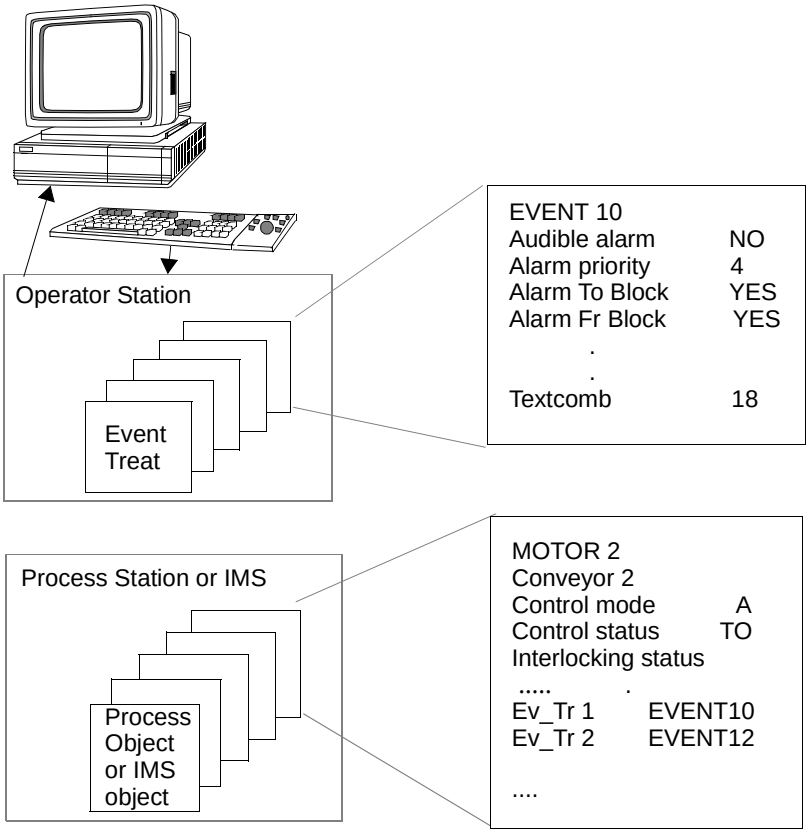


Figure 3-97. Event and alarm handling

The message includes:

- NAME of the object, for example "MOTOR 2".
- DESCRIPTION of the object, for example "Conveyor 2".
- A set of status flags for the internal control.
- Pointers to elements (EVENT) in the Event Treat database file, where the event is described.

Each process signal or process object contains at least one pointer to the Event Treat file. A digital input (DI), for example contains two Event Treat pointers, ERR_TR (Error Treat) and VALUE_TR (Value Treat).

ERR_TR is used for internal signal errors when the ERR flag changes status.

VALUE_TR is used for process events and process alarms when the signal value (VALUE) changes status, possibly together with the process error flag (DISTURBANCE).

Event Treat

The contents of the Event Treat file, and ways to vary the event handling, are described below:

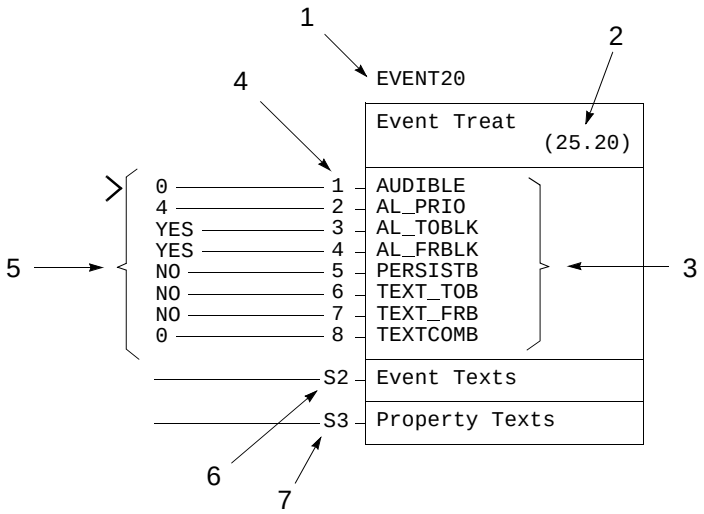


Figure 3-98. Data base element for event handling

1. Name and element number in the Event Treat file.
2. Logic file number and element number.
3. Properties whose values can be changed.
4. Property numbers.
5. Start values applied.
6. Segment S2 containing user-defined event texts for use instead of the standard system texts (applies only to EVENT20 - EVENT300).
7. Segment S3 containing user-defined property texts for use instead of the standard system texts (applies only to EVENT20 - EVENT300).

The properties in the EVENT element are described below:

AUDIBLE

See Section 3.3.14, External Alarm.

AL_PRIO

ALarm PRIOrity, that is color of printout in the Event and Alarm Lists. 1 = white, 2 = red, 3 = yellow, 4 = green, 5 = light blue, 6 = dark blue and 7 = magenta.

NOTE

There is no white flashing color. This means that if you choose AL_PRIO=1 you do not get the flashing marker for unacknowledge alarm in the alarm list or the object name on the last unacknowledge alarm line!

AL_TOBLK

ALarm TO BLocK. Blocks alarm handling of a supervised alarm signal/flag when it makes a 0 -> 1 transition. Since most alarm signals/flags are active high, AL_TOBLK should be set =N (No) to invoke alarm handling for 0 -> 1 transitions and =Y (Yes) to disable it.

AL_FRBLK

ALarm FRom BLocK. Blocks alarm handling of a supervised alarm signal/flag when it makes a 1 -> 0 transition. Since most alarm signals/flags are active high, and since alarm handling on return to normal makes little sense, AL_FRBLK should normally be set = Y (Yes).

PERSISTB

PERSISTent alarm Block. Should be set =N (No) when alarm handling either way is required and =Y (yes) when it is not. With PERSISTB =Y, it is possible to block, that is remove persistent alarms from the Alarm List after acknowledgment, even if the alarm situation persists. Normally, that is with PERSISTB =N, an alarm is only removed from the Alarm List when the alarm is acknowledged and disappears.

TEXT_TOBLK

TEXT TO BLocK. Flag that blocks generation of text in lists and printouts when the event/alarm changes from 0 ->1.

TEXT_FRBLK

TEXT FRom BLocK. Flag that blocks generation of text in lists and printouts when the event/alarm changes from 1 -> 0.

TEXTCOMB

TEXT COMBination code. Integer to select if standard or User defined property text and event text shall be used.

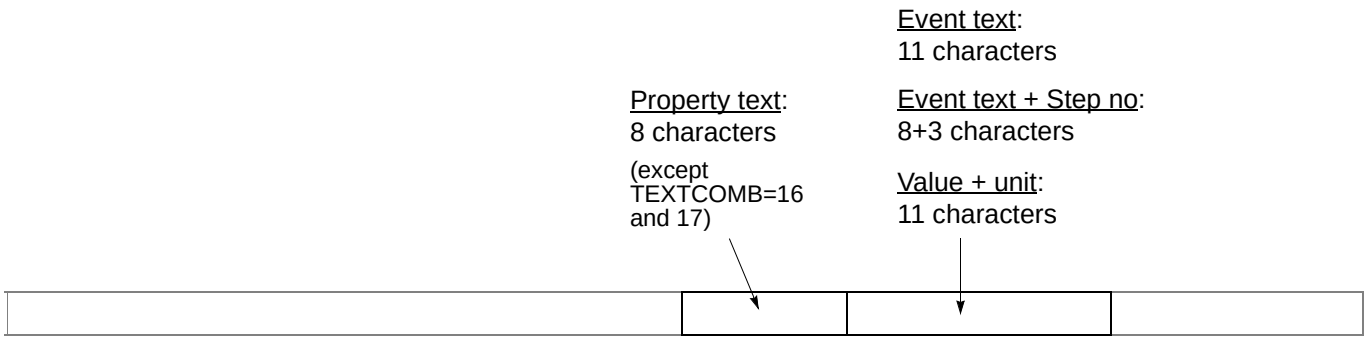


Figure 3-99. Maximum number of characters for the property and event texts

Table 3-6. Formats for property and event texts

TEXT COMBination code	Property text	Event text	
0	Standard	Standard	
1		User defined	
2	Standard		Value + unit
3	Standard	User defined	
4	User defined	Standard	
5	User defined	User defined	
16	User defined (1)	Standard	
17	User defined (1)	User defined	
18 (2)	Standard	Standard	+ Step no
19 (2)	Standard	User defined	+ Step no
20 (2)	User defined	Standard	+ Step no
21 (2)	User defined	User defined	+ Step no
24 (3)	Standard		Value + unit

(1) Suitable for long property texts (up to 20 characters).
(2) Specially adapted for the function unit Sequence (SEQ).
(3) Similar to TEXTCOMB=2, but only events caused by a process event will be entered in the list.

NOTE

Description can not be displayed if long Property texts are used (TEXTCOMB 16 and 17).

As mentioned earlier, EVENT20 - EVENT300 can accommodate user-defined event texts as an alternative to the standard texts in the system. You can enter these by expanding segment S2.

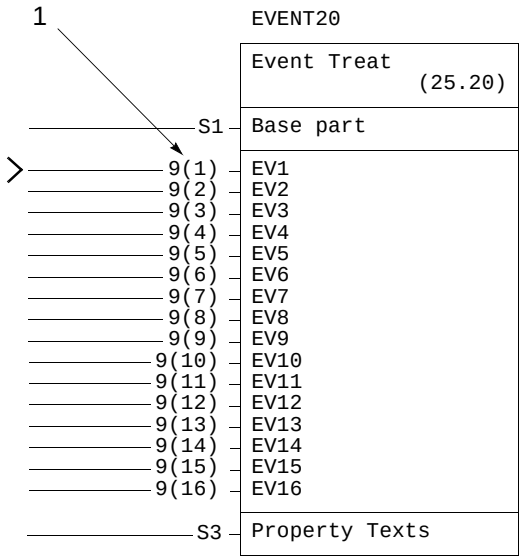


Figure 3-100. Segment S2 in Event Treat

1. Line numbers for **16** event texts. Each text can have a **maximum** of **11 characters**. Each event points out a certain line number. It is important when you use a user-defined event text that you put the text into the correct line number. The event which activates a certain line number pointer is described in Appendix A, Event Texts.

You enter the user-defined property texts in EVENT20 - EVENT300 by expanding segment S3:

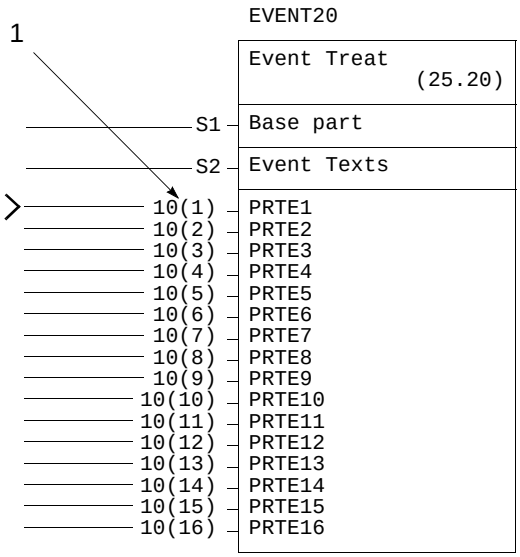


Figure 3-101. Segment S3 in Event Treat

1. The relative line numbers for **16** property texts. Each text has a **maximum** length of **20 characters**.

NOTE

TEXTCOMB decides max number of characters to be presented in the lists.

The coupling between the event and the line number is the same as it is for the event texts. For this reason, you must put the different texts on the correct lines. Appendix A, Event Texts, describes the events that generate different line number pointers.

There are **300** EVENT elements available, as described below:

EVENT1 - 18: Predefined for standard event handling (see Table 3-7).
Must not be changed by the user.

EVENT19: Reserved for future extensions of the standard handling.
Must not be changed by the user.

EVENT95-100: Reserved for Batch applications.

EVENT20 - 300: Available for user-defined event handling (except EVENT95-100).
All properties can be changed by the user.

Table 3-7. Predefined EVENT Elements for Standard Event Handling (EVENT1 - 18)

Property	EVENT																	
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
AUDIBLE	0	1	0	1	0	1	0	1	0	1	1	0	0	0	0	1	0	1
AL_PRIO	4	2	4	2	4	2	2	2	4	2	2	4	4	4	4	2	3	2
AL_TOBLK	Y	N	Y	N	Y	N	N	N	Y	N	N	Y	Y	Y	N	N	Y	N
AL_FRBLK	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
PERSISTB	Y	N	Y	N	Y	N	Y	N	Y	N	N	Y	Y	Y	N	N	Y	N
TEXT_TOB	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N
TEXT_FRB	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	N	N	N	N
TEXTCOMB	0	0	24	24	18	18	0	5	5	5	5	5	5	5	0	5	17	17

EVENT1, EVENT2

EVENT1 and EVENT2 are suitable for binary process signals and objects, for example DI, DO, GENBIN.

EVENT3, EVENT4

EVENT3 and EVENT4 are suitable for analog process signals and objects, for example AI, AO, GENCON and PIDCON.

EVENT5, EVENT6

EVENT5 and EVENT6 are specially adapted for SEQUENCE. EVENT1, EVENT3 and EVENT5 block all alarm handling whereas EVENT2, EVENT4 and EVENT6 permit alarm handling.

EVENT7

EVENT7 is suitable for use as DIST_TREAT for PIDCON, RATIOSTN and MANSTN to obtain an unacknowledged alarm indicated in the process Alarm List. No text is created.

EVENT8

EVENT8 is specially adapted for use as I1_TR for GROUP.

EVENT9

EVENT9 is specially adapted for use as I2_TR for GROUP.

EVENT10

EVENT10 is specially adapted for use as I1_TR for MOTCON.

EVENT11

EVENT11 is specially adapted for use as I1_TR for VALVECON.

EVENT12

EVENT12 is specially adapted for use as I2_TR for MOTCON.

EVENT13

EVENT13 is specially adapted for use as I2_TR for VALVECON.

EVENT14

EVENT14 is specially adapted for use for texts generated from the AMPL element EVENT in the Process Station.

EVENT15

EVENT15 is specially adapted for the Status List and contains texts for objects in normal conditions.

EVENT16

EVENT16 is specially adapted for use as ADAP_TR for PIDCONA.

EVENT17

EVENT17 is specially adapted for SPC (Statistical Process Control).

EVENT18

EVENT18 is specially adapted for SPC (Statistical Process Control).

Example 1: Standard Event Text

Provide a DI signal with alarm handling. Standard event text is required.

Make a connection to the Process Station containing the data base element for the DI signal. You do this either by using the On-line Builder (option) or using an Advant Station 100 Engineering Station.

If you use the On-line Builder you do as follows:

- Press **F2** or click on the screen button D2 (AdvaBuild…) in the Configuration dialog.
- Press **F6** or click on the screen button D6 (On-line Builder).
- Give password.
- Select network and node for the Process Station and start the On-line Builder

You are now connected to the Process Station.

A prompt * is displayed.

Call up and modify the data base element for the DI1.2 signal

- Enter **MDB DI1.2** and press **<CR>** .

The data base element for DI1.2 is displayed on the screen.

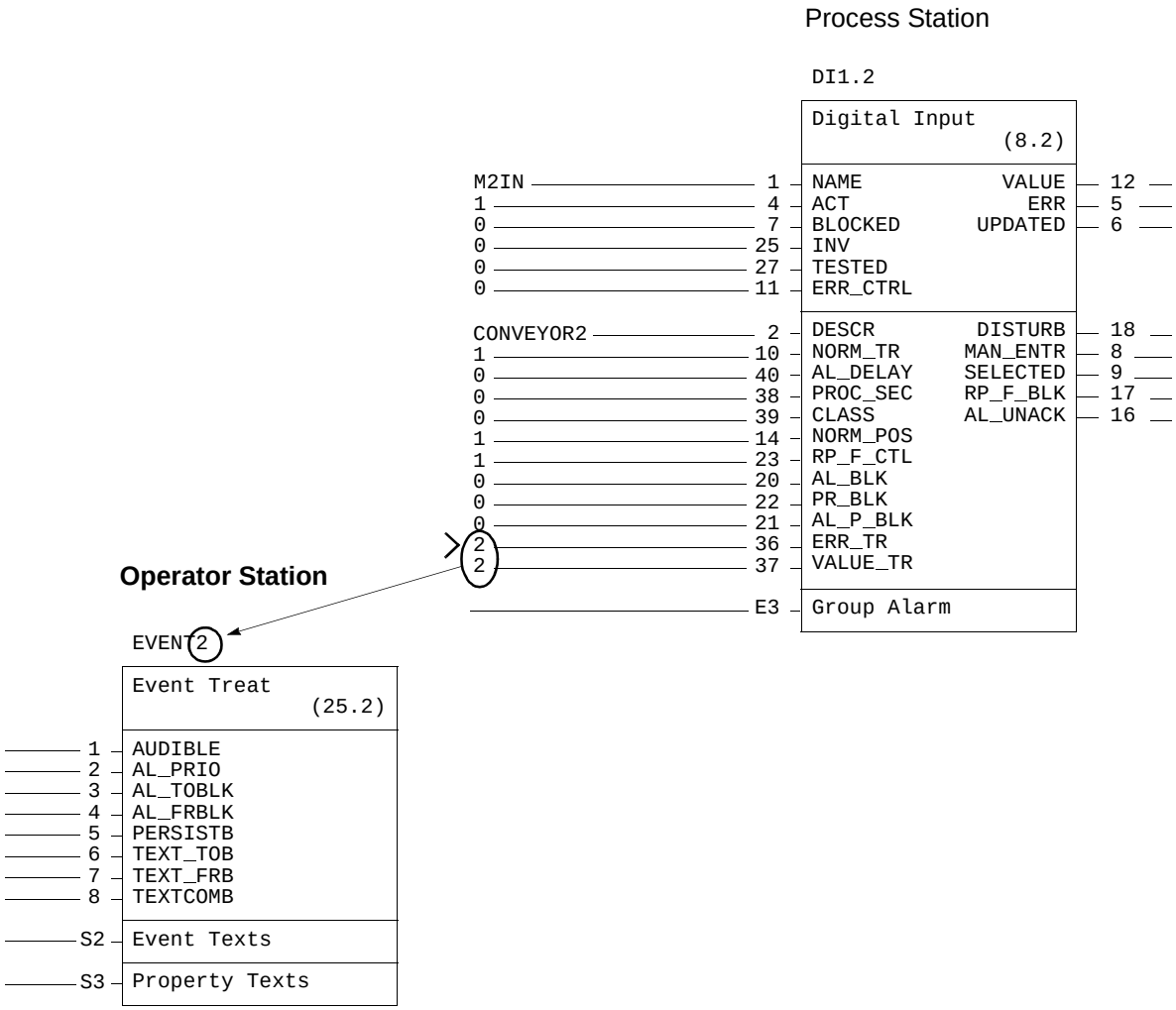


Figure 3-102. Linkage between data base elements

- Enter name and description for the signal.
- Enter value for ERR_TR and VALUE_TR.

ERR_TR and VALUE_TR are pointers to elements in the Event Treat file in the operator station. In this example, both ERR_TR and VALUE_TR point at EVENT2. EVENT2 is predefined for standard event handling and can not be changed.

The data base element EVENT2 has the following properties:

AUDIBLE	1	= audible alarm
AL_PRIO	2	= red printout of lists
AL_TOBLK	N	= acknowledgment required at alarm
AL_FRBLK	Y	= blocking of acknowledgment when the alarm returns to its normal status
PERSISTB	N	= remaining alarm persists in the list despite acknowledgment
TEXT_TOB	N	= printout with alarm
TEXT_FRB	N	= printout when the alarm returns to the normal status
TEXTCOMB	0	= printout in accordance with:

						Name	Description	Standard property text	Standard event text	Date/Time

Example:

M2IN	Conveyor	Value	Alarm	95-03-14 02:45:51:398

Figure 3-103. Example of Printout Format (TEXTCOMB=0)

The linkage to the operator station is now complete.

Appendix A, Event Texts, contains the standard texts for alarms and events for DI.

Example 2: User-Defined Event and Alarm Text

Give an AI signal user-defined event and alarm texts. The signal has the name K540, the description OIL LEVEL and measurement range 0 - 1000 liters with alarm limits at 50 and 950 liters.

Make a connection to the Process Station as described in example 1.

A prompt * is displayed.

- Enter **MDB AI1.1** and press **<CR>**

The data base element for AI is displayed on the screen.

- Enter values as shown in Figure 3-104.

  EN_H2 and EN_L2 are set to 1 to enable alarm handling

  ERR_TR points at EVENT4.

  LIM_1_TR is set to 0, that is no event handling.

  LIM_2_TR points at EVENT20.

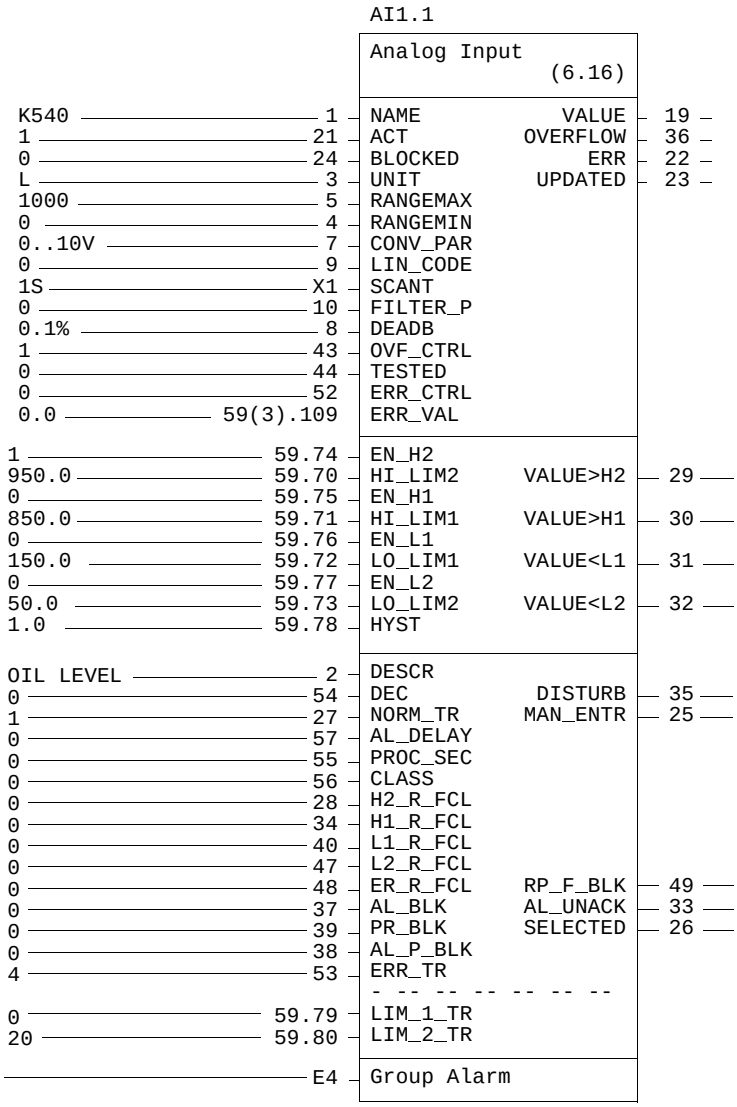

AI1.1
Analog Input
(6.16)
K540 — 1 — NAME
1 — 21 — ACT
0 — 24 — BLOCKED
L — 3 — UNIT
1000 — 5 — RANGEMAX
0 — 4 — RANGEMIN
0..10V — 7 — CONV_PAR
0 — 9 — LIN_CODE
1S — X1 — SCANT
0 — 10 — FILTER_P
0.1% — 8 — DEADB
1 — 43 — OVF_CTRL
0 — 44 — TESTED
0 — 52 — ERR_CTRL
0.0 — 59(3).109 — ERR_VAL
VALUE — 19
OVERFLOW — 36
ERR — 22
UPDATED — 23
1 — 59.74 — EN_H2
950.0 — 59.70 — HI_LIM2
0 — 59.75 — EN_H1
850.0 — 59.71 — HI_LIM1
0 — 59.76 — EN_L1
150.0 — 59.72 — LO_LIM1
0 — 59.77 — EN_L2
50.0 — 59.73 — LO_LIM2
1.0 — 59.78 — HYST
VALUE>H2 — 29
VALUE>H1 — 30
VALUE<L1 — 31
VALUE<L2 — 32
OIL LEVEL — 2 — DESCR
0 — 54 — DEC
1 — 27 — NORM_TR
0 — 57 — AL_DELAY
0 — 55 — PROC_SEC
0 — 56 — CLASS
0 — 28 — H2_R_FCL
0 — 34 — H1_R_FCL
0 — 40 — L1_R_FCL
0 — 47 — L2_R_FCL
0 — 48 — ER_R_FCL
0 — 37 — AL_BLK
0 — 39 — PR_BLK
0 — 38 — AL_P_BLK
4 — 53 — ERR_TR
- -- -- -- -- -- --
0 — 59.79 — LIM_1_TR
20 — 59.80 — LIM_2_TR
DISTURB — 35
MAN_ENTR — 25
RP_F_BLK — 49
AL_UNACK — 33
SELECTED — 26
— E4 — Group Alarm

Figure 3-104. Data base element Analog Input

As presented in Table 3-7, EVENT4 has the following properties:

AUDIBLE	1	= audible alarm
AL_PRIO	2	= red printout on lists
AL_TOBLK	N	= acknowledgment required at alarm
AL_FRBLK	Y	= no acknowledgment required when the alarm returns to its normal status
PERSISTB	N	= remaining alarm persists in the list despite acknowledgment
TEXT_TOB	N	= printout with alarm
TEXT_FRB	N	= printout when the alarm returns to the normal status
TEXTCOMB	24	= printout in accordance with:

				Name	Description	Standard property text	Value + unit	Date/Time

Figure 3-105. Printout Format (TEXTCOMB=24)

No pointers are set for H1 and L1. EN_H1 and EN_L1 are set to 0 since no warning limits (H1 and L1) are set in the Process Station.

LIM _2_TR points at a data base element, EVENT20, in the Event Treat file, which you can set. The configuration in the Process Station is now complete.

- Make a connection to the operator station by selecting the network and node numbers for the operator station.
- Enter **MDB EVENT20** and press **<CR>**.

  The data base element is displayed on the screen.

2. Enter the values as shown in Figure 3-106.

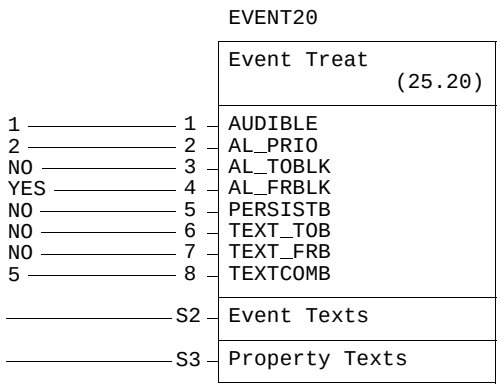


Figure 3-106. Changes in the Data Base Element EVENT20

The properties in the first part are the same for ERR_TR, but with the presentation shown in accordance with the following:

				Name	Description	User defined property text	User defined event text	Date/Time

Figure 3-107. Printout format (TEXTCOMB=5)

When you define the event and property texts, take note that the events are linked to predefined lines in the segment Event Texts and Property Texts. These lines are listed in the table for standard event texts for AI (see Appendix A, Event Texts).

Since only the LIM_2_TR pointer is of interest, it is selected in the following figure.

Table 3-8. Standard texts for the pointer LIM_2_TR

Event	Pointer	Standard property text	Line no	Standard Event text	Line no
Upper limit H2 exceeded	LIM_2_TR	Limit H2	1	Alarm	1
Upper limit H2 re-entered	LIM_2_TR	Limit H2	1	Normal	3
Lower limit L2 exceeded	LIM_2_TR	Limit L2	2	Alarm	2
Lower limit L2 re-entered	LIM_2_TR	Limit L2	2	Normal	4

- Change the property texts **Limit H2** on line 1 and **Limit L2** on line 2 to **Full** and **Empty**. Change the standard event text **Alarm** on line 1 and 2 to **950** l and **50** l (liters), respectively.

Keep the standard texts on line 3 and 4 as user-defined texts.

Also enter these property texts in EVENT20.

- Expand Event Text:

  ? **S2**

  ? **M**

- Enter the event texts in accordance with the following:

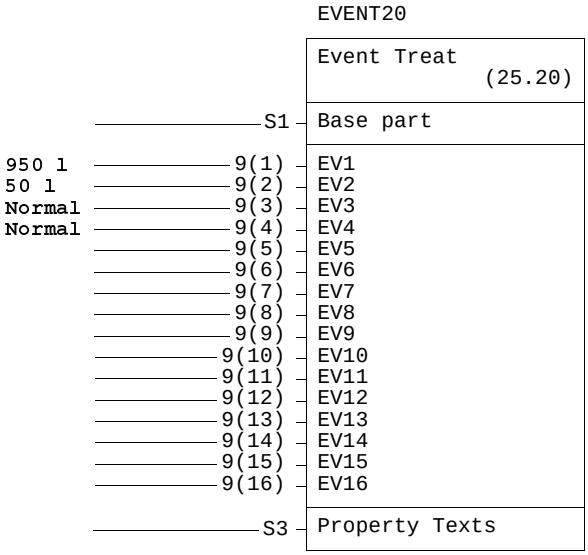


Figure 3-108. Population of Segment S2 in the Event Treat element

- Expand Property Texts:

  ? **S3**

  ? **M**

- Enter the event texts in accordance with the following:

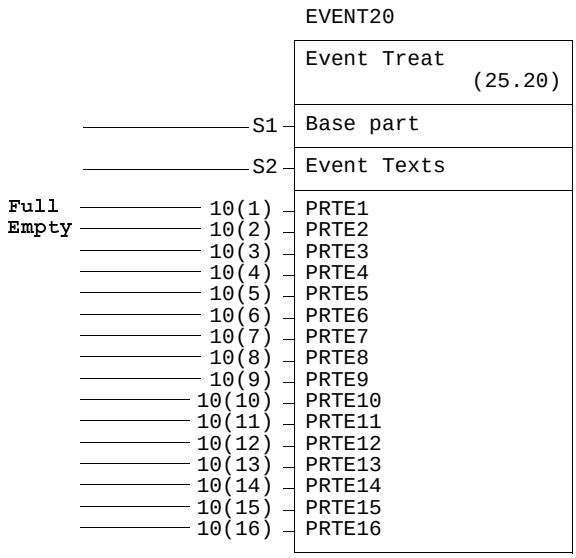


Figure 3-109. Population of Segment S3 in the Event Treat element

The configuration for the event handling for the AI signal is now complete.

3.3.13 Event Printer

AdvaCommand…D1 Event Printer

You use **Event Printer** to define printers for events, alarms and system alarms logging.

- Press **F1** or click on the screen button D1 (AdvaCommand…) in the configuration dialog.
- Press **F1** or click on the screen button D1 (Event Printer).

The following dialog box is displayed:

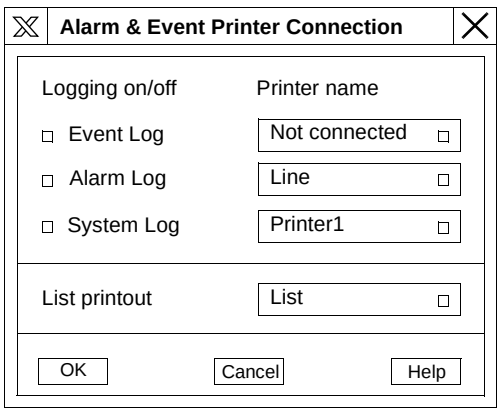


Figure 3-110. Event printer dialog box

An armed (pressed) button indicates logging of alarms, events or system alarm. Press the option menu button to define which printer to be used.

You can also define a separate printer for list printouts.

If you have the option Process Section installed in the operator station you make the printer connection in the option. Instead of Event Printer on the dynamic function key you read Process Section.

3.3.14 External Alarm

3.3.14.1 Overview

AdvaCommand…D3 External Alarm

When process objects are configured, they can be associated to external alarm handling. When the object goes to alarm status, a sound from an external speaker is activated.

Each data base element with event handling contains at least one pointer to the Event Treat file, for example an AI (analog input) contains three Event Treat pointers, ERR_TR (Error Treat), LIM_1_TR (H1 and L1 LIMit TReat) and LIM_2_TR (H2 and L2 LIMit TReat).

When an event occurs in a process object or process signal in a process station a message is sent to the Alarm and Event Handler. The event can also occur in an IMS station or be a system alarm. If there is a pointer to an element (EVENT) in the Event Treat file, an announcement is sent to the External Alarm Handler. The External Alarm Handler utilizes **Priority 1**, **Priority 2**, **Priority 3** and **Priority 4.** The connection between the Priority in the configured data of External Alarm is the property AUDIBLE in the Event Treat file. The External Alarm Handler receives also **Section** which is defined in the property PROC_SEC in the process object.

The data in the AUDIBLE and PROC_SEC properties are compared with the **Priority** and **Section** data in the External Alarm Configuration. The external alarm announcement is carried out where there is a perfect match. Depending on the External Alarm Configuration different devices are activated. The data flow for an analog input process alarm is described in Figure 3-111.

EVENT1 - 19 are predefined for standard event handling. EVENT20 - 300 are available for the user. In order to use the priorities to its full extent the user application has to configure this in the Event Treat file, by copying the standard EVENT1 - 19 to other database instances and change the property AUDIBLE. This can be accomplished by the RTA board configuration tool and the MDB command to change property values.

The figure below illustrates the data flow and references for **process** alarms and events:

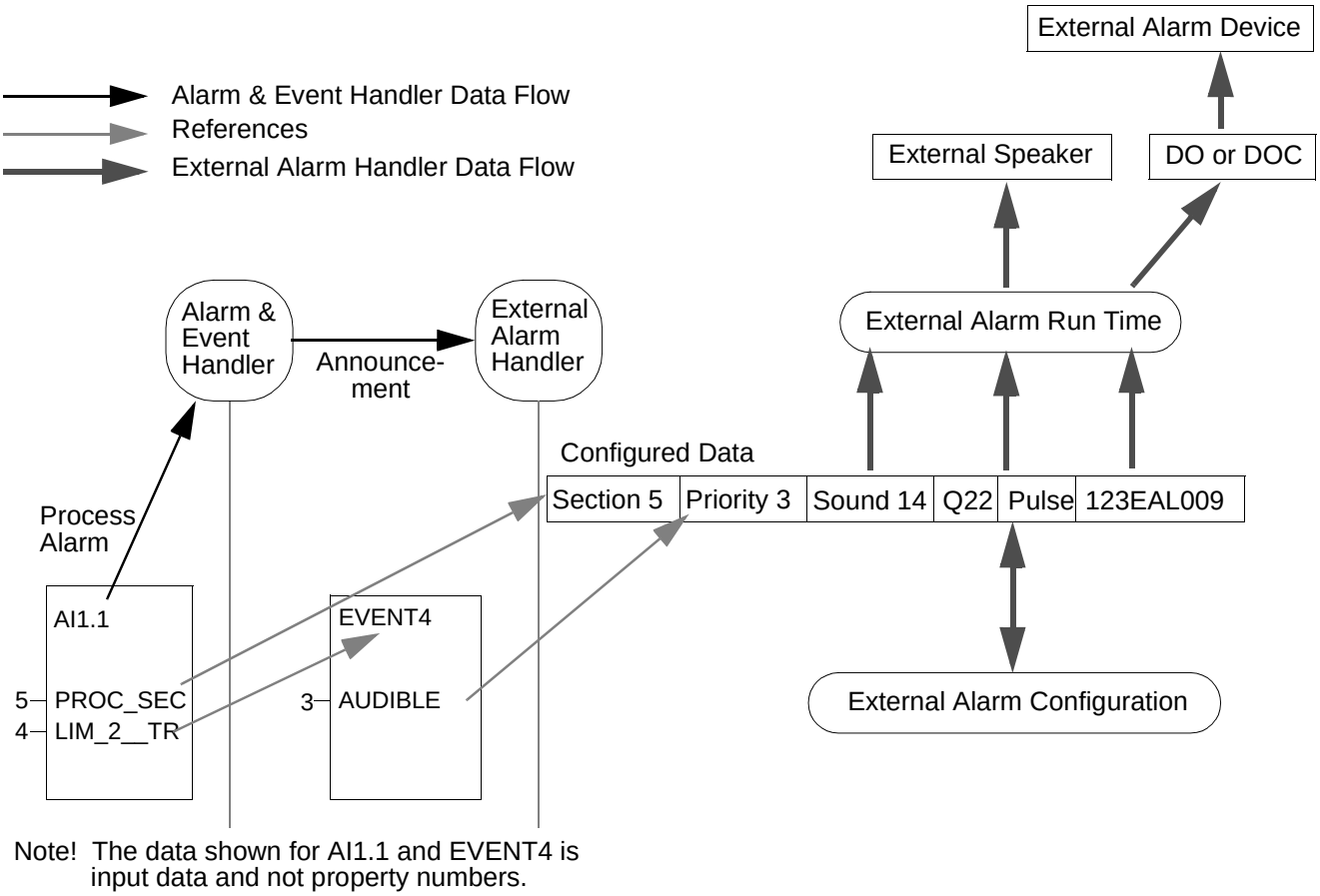


Figure 3-111. Example of data flow for external process alarm

An external process alarm is activated if:

- The Alarm and Event Handler receives an alarm or an event from a process object that references an Event_Treat element. Any process object that refers to an Event_Treat element can be treated as an announcement.
- The AUDIBLE property on the Event_Treat has a value between 1-4.

The AUDIBLE property refers to **Priority** in the configured data.

The PROC_SEC property refers to **Section** in the configured data. PROC_SEC equal to 0 refers to Default **Section**.

If Process Sectioning is included the section that the process object belongs to must be configured to store and display events and alarms. The section must also be configured to enable external alarm outputs. For further information, see *AdvaCommand Process Sectioning User's Guide*.

The figure below describes the data flow and references for **system** alarms:

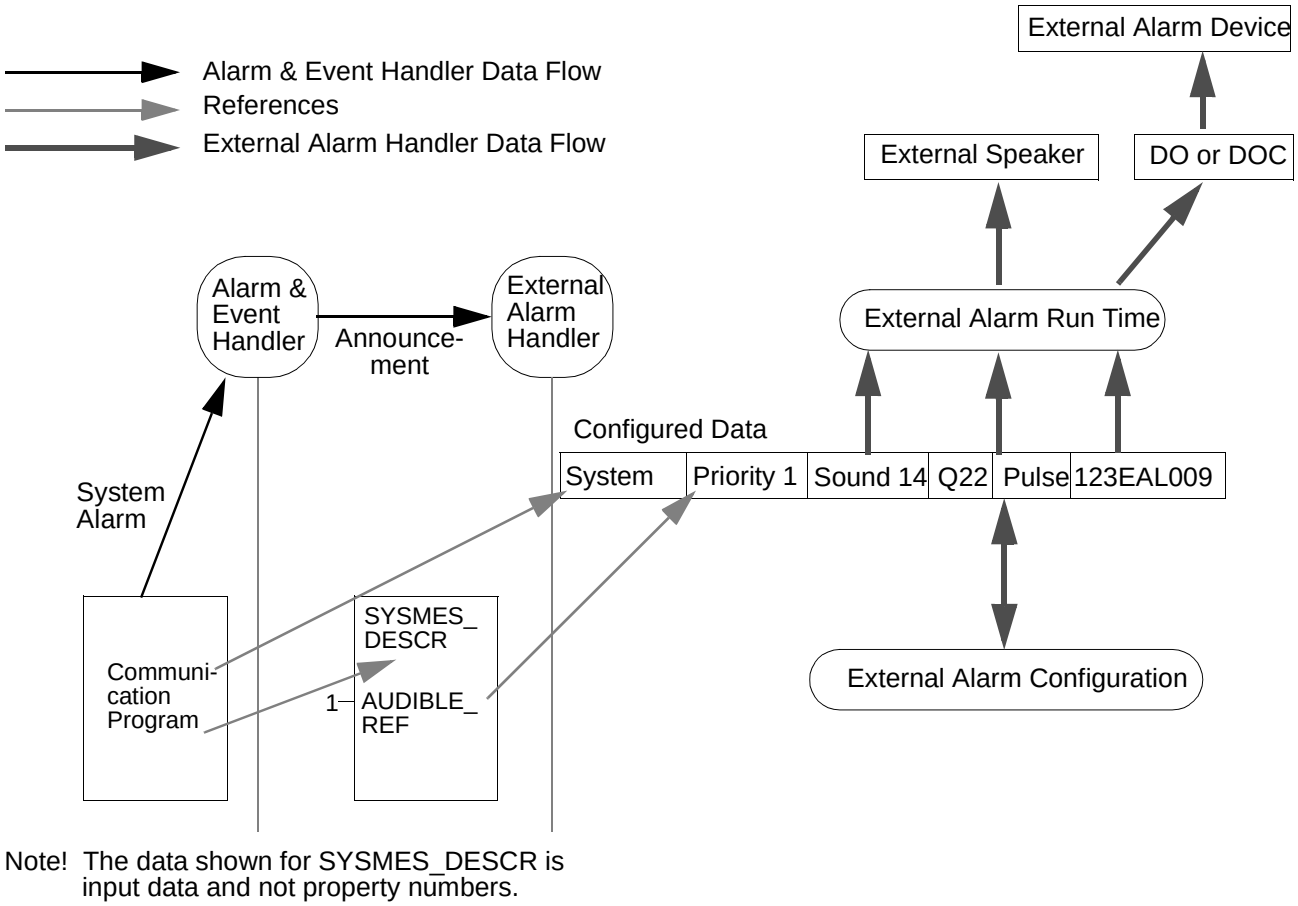


Figure 3-112. Example of data flow for external system alarm

An external system alarm is activated if:

- The Alarm and Event Handler receives a system alarm from a program that references a System Message Description intended for the System List.
- The AUDIBLE_REF property in System Message Description is equal to 1.

The AUDIBLE_REF property refers to **Priority** in the configured data.

The program, generating the system alarm, contains a reference to **System** in the configured data.

If Process Sectioning is included the system alarms must be configured to enable external alarm outputs.

The following 19 sections are available:

- 1 - **Default Section** - For process objects where the section is not defined (PROC_SEC=0).
- 16 - **Process Sections** - Defined by AdvaCommand Process Sectioning option.
- 1 - **System Section** - For System Alarm announcements.
- 1 - **Silence Section** - To activate a pulse.

If the AdvaCommand Process Sectioning option is available, the section number of the process object refers to the corresponding **Process Section** in the configured data. Otherwise, it refers to the **Default Section**.

The **Silence Section** is activated when you select the item **Silence** from the pop-up menu **Operation,** or click on the icon for silence in the screen header. This feature is included to propagate the silence order to an alien external alarm announcement device.

Actions for the alarm announcement are set according to the configured data you define in the Configuration Window.

To enter the external alarm configuration display, do the following:

- Select the item **System Config** from the pop-up menu **Operation**.
- Press **F1** or click on the screen button D1 (AdvaCommand...) in the configuration dialog.
- Press **F3** or click on the screen button D3 (External Alarm).

  The following display is presented:

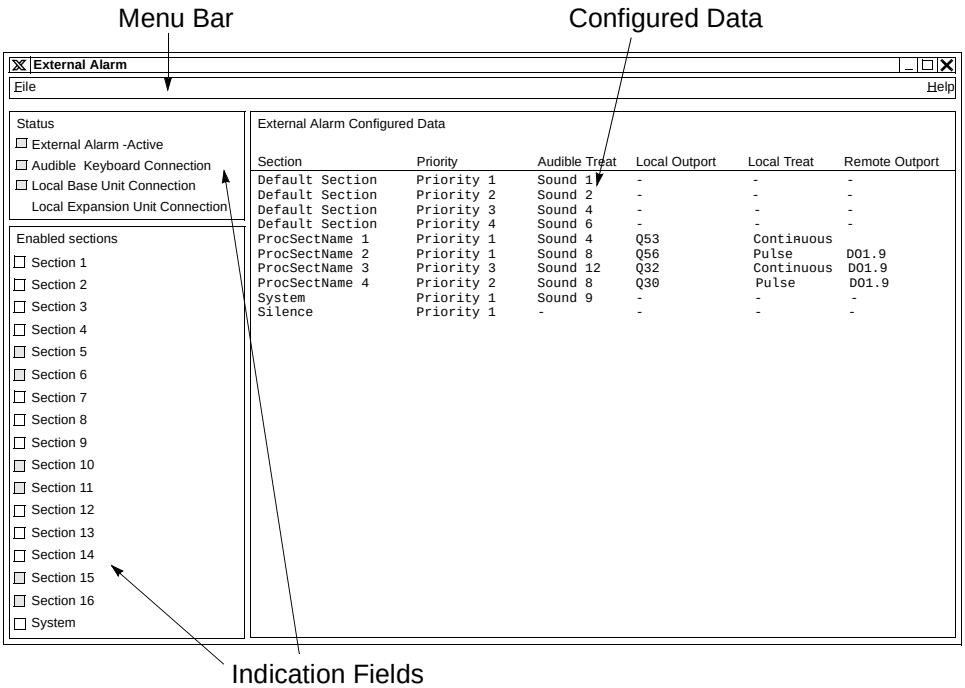


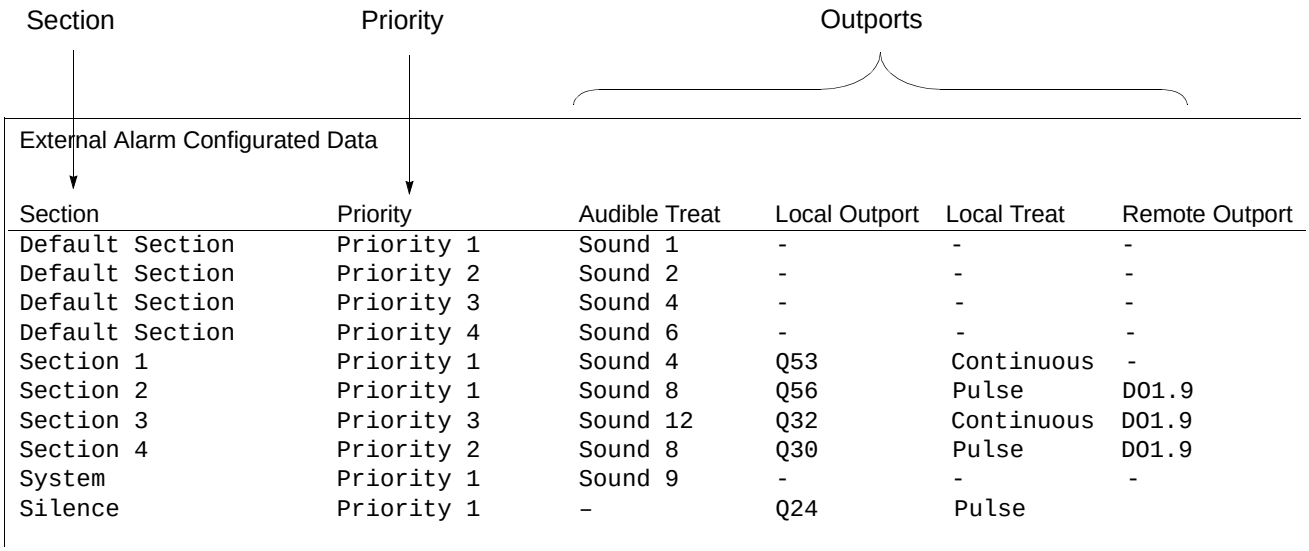
Figure 3-113. Configuration window for external alarm

The display is comprised of three parts: **Configured Data**, **Indication Fields** and **Menu Bar**.

1. The **Configured Data** area holds all configured combinations of section, priority and actions.
2. The **Indication Fields** show active status for connected hardware and associated functions.
3. The **Menu Bar** provides access, via the **File** and **Help** menus, to all commands, such as activate/deactivate, test of sound types, etc.

3.3.14.2 Configured Data

The configured data field contains columns for **Section**, **Priority** and **Outports**:



Section	Priority	Audible Treat	Local Outport	Local Treat	Remote Outport
Default Section	Priority 1	Sound 1	-	-	-
Default Section	Priority 2	Sound 2	-	-	-
Default Section	Priority 3	Sound 4	-	-	-
Default Section	Priority 4	Sound 6	-	-	-
Section 1	Priority 1	Sound 4	Q53	Continuous	-
Section 2	Priority 1	Sound 8	Q56	Pulse	DO1.9
Section 3	Priority 3	Sound 12	Q32	Continuous	DO1.9
Section 4	Priority 2	Sound 8	Q30	Pulse	DO1.9
System	Priority 1	Sound 9	-	-	-
Silence	Priority 1	–	Q24	Pulse	

Figure 3-114. Configured data field in the External Alarm configuration window

Outport Types

Two different **outport types** announce the occurrence of an alarm:

1. Audible Treatment

   Audible Treat refers to a specified sound from an external speaker via a sound board in the PC. The system can generate fifteen (15) different sounds to separate different external alarm levels. If you prefer any other sound, you can record and use it as well. Notice that you must replace one of the fifteen stored sounds with the new one. The sound files must be saved in the Wave Sound format (.wav) and named as follows: extAlarmSound*xx*.wav (where *xx* is a two digit number between 1 and 15). The sound files are stored at /product/data/standard/OS/config.

Local Treat acts as a continuously high or pulse signal, see Figure 3-115 below. *Activation* refers to an activation of an external alarm. You select the item **Silence** from the pop-up menu **Operation** to *Deactivate*. If the **Silence Section** is configured a pulse signal will then occur at the outport configured at *Deactivation*.

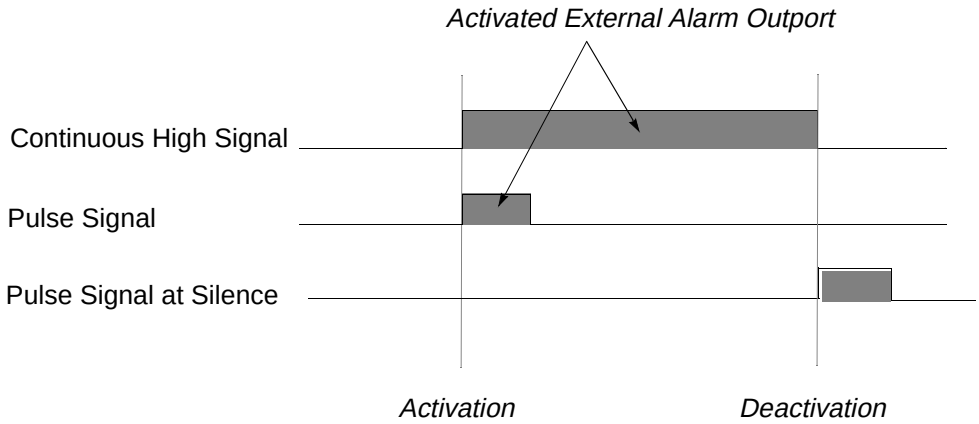


Figure 3-115. Activate/deactivate local outport state

2. Remote Outport

   Remote Outport sends a continuous high to a configured digital output with the same name as configured, which is located elsewhere in the control network.

Section and Priority

You can use the external alarm before any configuration is done. The following pattern is predefined:

External Alarm Configurated Data

Section	Priority	Audible Treat	Local Outport	Local Treat	Remote Outport
Default Section	Priority 1	Sound 1	–	–	–
Default Section	Priority 2	Sound 2	–	–	–
Default Section	Priority 3	Sound 4	–	–	–
Default Section	Priority 4	Sound 6	–	–	–
System	Priority 1	Sound 9	–	–	–
Silence	Priority 1	-	–	–	–

Figure 3-116. Predefined configuration

You can separate the predefined pattern into three parts with respect to the values in the Section column:

1. Default Section with Four Priorities

   Use the Default Section when an alarm announcement is triggered from a process object. Two cases are considered:

   – When the AdvaCommand Process Sectioning option is present in the operator station, the Default Section is active for process objects with property PROC_SEC set to zero (0) in the Process Station.

   – When the AdvaCommand Process Sectioning option is **not** present in the operator station, the Default Section causes an alarm announcement from process objects in the Process Station even if the section number is greater than zero (0).

   Only Audible Treat is predefined as outport:

   – Priority 1 - One short beep (Sound 1)

   – Priority 2 - Two short beeps (Sound 2)

   – Priority 3 - Three short fast beeps (Sound 4)

   – Priority 4 - Four short fast beeps (Sound 6)

2. System

   The alarm announcement of system alarms is handled by a separate section and priority combination.

   Only Audible Treat is predefined as outport:

   – Priority 1 - continuously sounding chirp (Sound 9)

3. Silence

   You can extend the use of the item Silence in the pop-up menu Operation. Select a Local Outport, with Local Treat set to **Pulse**, to transfer the silence order to external alarm announcement hardware devices for further manipulation outside the operator station.

   With this feature, you can use the External Alarm Handler outside the opertor station. Together with the Addressing facility in the AdvaCommand Process Sectioning option, the treatment of silence is extremely powerful when you are dealing with interconnection to external alarm announcement hardware devices.

There is no predefined Local Outport for any deafault section.

You can change and add the configurated data using the **File** menu. You cannot, however, delete any of the predefined Sections.

3.3.14.3 Indication Fields

The indication fields contain **two** different types of indications:

Status

Information presented here is primarily fetched from AdvaCommand System Status. Hardware associated with the external alarm includes the external speaker and the number of Local Outports, see figure below.

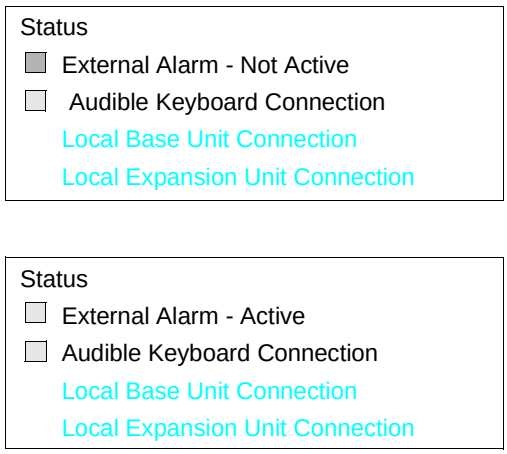


Figure 3-117. Indication field status in the External Alarm configuration window

The **first row** presents status for the external alarm in the operator station. You set the status in the **File** menu.

- A filled green square in front of the text **External Alarm - Active** means that the external alarm is activated.
- A green framed square with a grey background in front of the text **External Alarm - Not Active** means that the external alarm is deactivated.

The **second row** presents the status on the keyboard connected to the operator station.

- An empty space in front of the text **Audible Keyboard Connection** means that the keyboard connected to the operator station is **NOT** ABB type and the External Alarm Handler **CANNOT** use the Audible Treat outport within the application.

The **third and fourth row**, with the dimmed text **Local Base Unit Connection** and **Local Expansion Unit Connection** is not used in an operator station with AdvaCommand for Windows NT.

Enabled sections

Information presented here is fetched from the Active Delagation of the AdvaCommand Process Sectioning option.

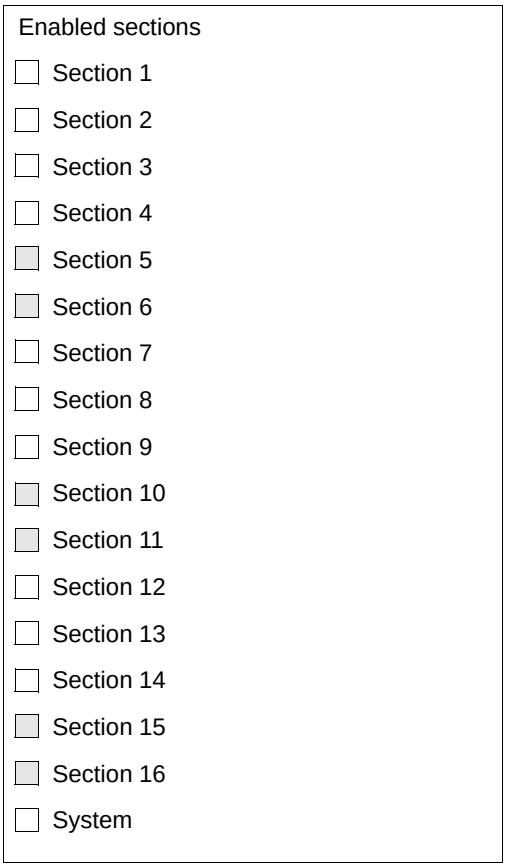


Figure 3-118. Enabled sections in the External Alarm configuration window

All rows present status on enabled sections. The sections are either enabled or disabled. The section names and status are set by the AdvaCommand Process Sectioning option.

- A filled green square in front of the section name means that the External Alarm Handler is affected by alarm announcements from the enabled section.
- A green framed square, on grey background, to the left of the of the section name means that the External Alarm Handler is **NOT** affected by alarm announcements from that section.

If the AdvaCommand Process Sectioning option is **NOT** installed in the operator station, an empty space is presented in front of the section name and the names are dimmed. The section name strings have default names like "Section 1," Section 2," etc.

3.3.14.4 Menu Bar

The Menu Bar is located in the upper portion of the Configuration Window and consists of pop-up menus with activities available to configure external alarms.

Two different menu options are available from the **Menu Bar**, see Figure 3-119 below.

File

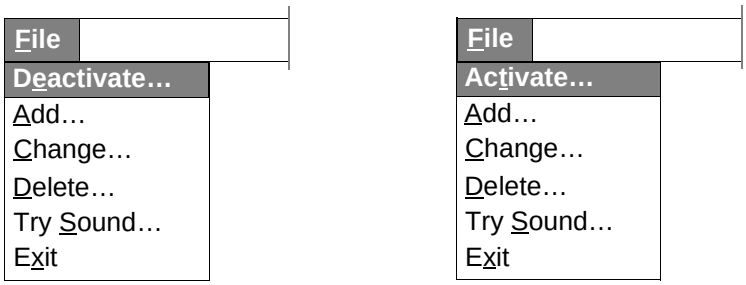


Figure 3-119. File menu for external alarm

Deactivate… / Activate… When you select **Deactivate.../Activate...**, a dialog box is displayed. The information in the dialog box depends on the state of the External Alarm Handler. These functions requires max dialog.

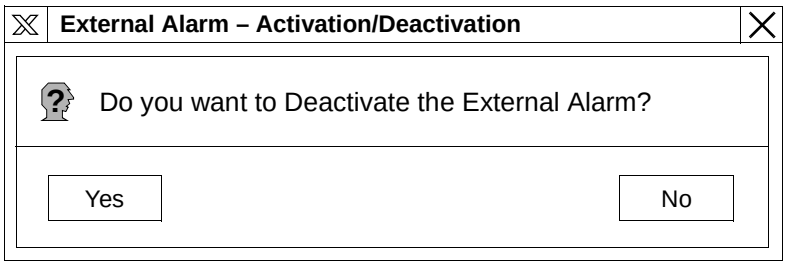


Figure 3-120. Deactivate external alarm handler dialog box

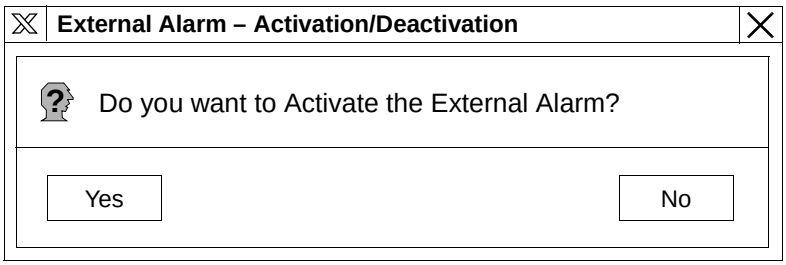


Figure 3-121. Activate external alarm handler dialog box

Add… Adds a new combination of section and priority in the Configured Data field. This function requires max dialog.

- A dialog box with undefined configured data is displayed:

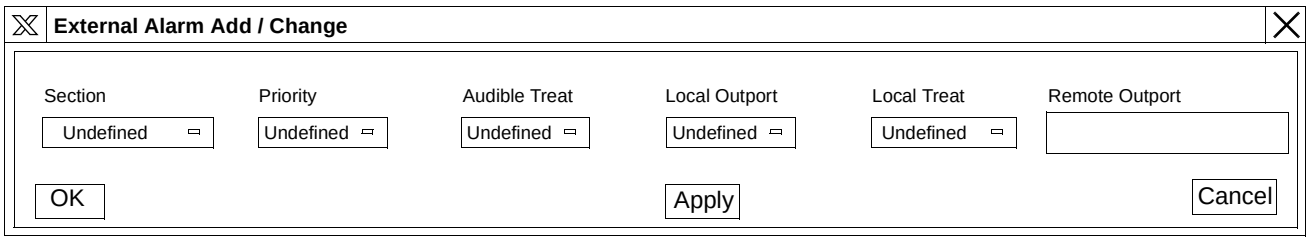


Figure 3-122. Add a section and priority combination

a. Click on the box below the label **Section**. A menu listing all available sections appears. Select a section by clicking. The selected section is displayed on the button.

   Note that for the **Silence section**, the Audible Treat and Remote Outport are not available. Local Treat is forced to Pulse if Local Outport is set.

b. Select **Priority** in the same way as you selected **Section**.

c. Select values for **Audible Treat**, **Local Outport** and **Local Treat**, if applicable, using the option menus under the designated fields.

   Note that the **first three values** in the menu for Local Outport are **dimmed**, indicating that these outputs are intended for the Delagation Identity of the AdvaCommand Process Sectioning.

d. Insert value for Remote Outport, unless **Section** is set to Silence.

e. Press **Apply** or **OK** to add the new combination to the External Alarm Configured Data list.

Apply

Adds the new combination of section and priority.

OK

Terminates the dialog after adding the new combination of section and priority.

Cancel

Terminates the dialog without adding the new combination of section and priority.

A dialog box is displayed to save the changes if you press **Apply** or **OK** and changes are made. The dialog box is described in text following Figure 3-125.

Change... Changes an existing combination of section and priority in the Configured Data field. This function requires max dialog.

- Click on the section and priority combination you want to modify in the Configuration Window.

External Alarm Configurated Data

Section	Priority	Audible Treat	Local Outport	LocalTreat	Remote Outport
Default Section	Priority 1	Sound 1	-	-	-
Default Section	Priority 2	Sound 2	-	-	-
Default Section	Priority 3	Sound 4	-	-	-
Default Section	Priority 4	Sound 6	-	-	-
Section 1	Priority 1	Sound 4	Q53	Continuous	-
Section 2	Priority 1	Sound 8	Q56	Pulse	DO1.9
Section 3	Priority 3	Sound 12	Q32	Continuous	DO1.9
Section 4	Priority 2	Sound 8	Q30	Pulse	DO1.9
System	Priority 1	Sound 9	-	-	-
Silence	Priority 1	–	–	–	–

Figure 3-123. Selected combination in the configuration window

a. Select **Change** from the **File** menu.

A dialog box is displayed:

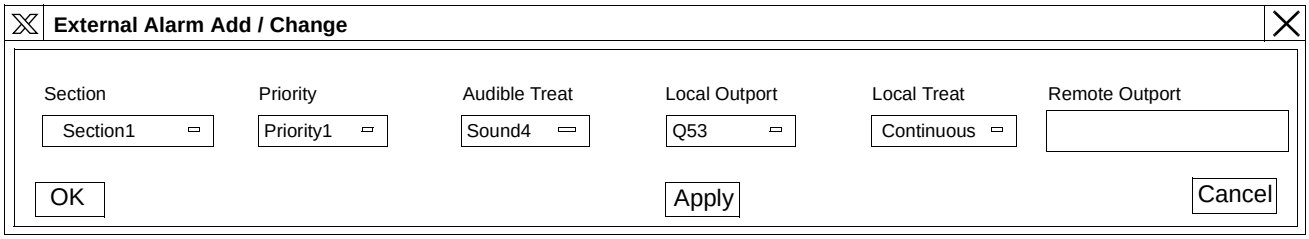


Figure 3-124. Change a section and priority combination

b. Click on the box below the label **Section**. A menu listing all available sections appears. Select a section by clicking. The selected section is displayed on the button.

Note that for **Silence section**, the Audible Treat and Remote Outport are not available. Local Treat is forced to Pulse if Local Outport is set.

c. Select **Priority** from the menu in the same way you selected **Section**.

d. Change values for **Audible Treat**, **Local Outport** and **Local Treat** if applicable, using the option menus under the designated fields.

e. Note that the **first three values** in the menu for Local Outport are **dimmed**, indicating that these outputs are intended for the Delagation Identity of the AdvaCommand Process Sectioning.

f. Change value for Remote Outport, unless **Section** is set to Silence.

Press **Apply** or **OK** to make the changes permanent in the Configured Data list.

Apply

Makes changes permanent in the Configurated Data List. This list is also saved and changes made during configuration affect the run-time portion of the External Alarm Handler. The dialog box remains on screen and enables you to continue the Change dialog.

OK

Performs the same functions as **Apply** except the dialog box is closed and the dialog is terminated as soon as the new combination of section and priority is added to the changed list.

After **OK** or **Apply** is pressed and changes are made the following dialog box appears.

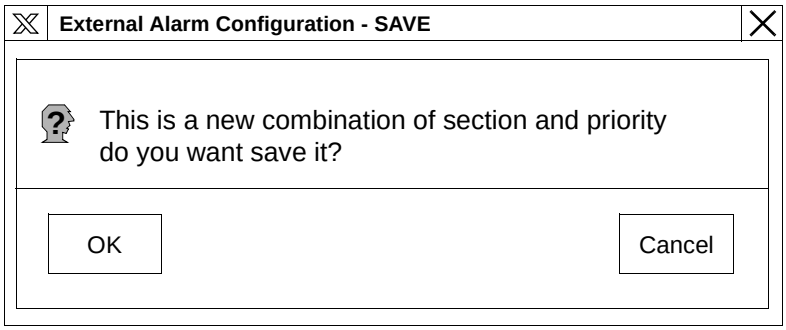


Figure 3-125. External alarm configuration save dialog box

OK

The list is saved. Depending on if **Apply** or **OK** was pressed the configuration dialog is kept or closed.

Cancel

No saves are performed. The configuration dialog is kept.

Cancel

Terminates the dialog without making any changes.

After **Cancel** is pressed and changes have been made the following dialog box appears.

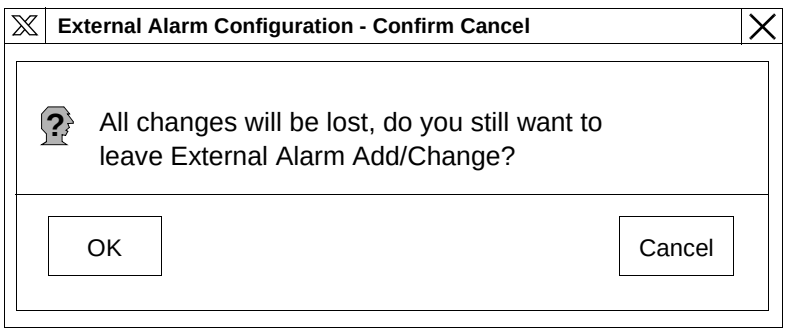

External Alarm Configuration - Confirm Cancel
All changes will be lost, do you still want to
leave External Alarm Add/Change?
OK
Cancel

Figure 3-126. External alarm configuration confirm cancel dialog box

OK

No saves are performed. The configuration dialog is closed.

Cancel

No saves are performed. The configuration dialog is kept.

An error box is displayed if you press **Apply** or **OK** and any of the following conditions are set:

– Section equals "System" and Priority is not equal 1.

– Section equals "Silence" and Priority is not equal 1.

– Section equals "Silence" and Audible Treat is not equal to "Undefined".

– Section equals "Silence" and Local Treat is not equal to "Pulse".

– Section equals "Silence" and Remote Outport is not empty.

Delete… Erases an existing combination of section and priority from the Configured Data field.

- Select by clicking on the section and priority combination in the Configuration Window.

  The Default Section, System and Silence combinations cannot be deleted. If you select such a combination, an error box is displayed informing you that you made an incorrect section and priority combination choice.

  a. Select **Delete** from the **File** menu.

     The following dialog box is displayed:

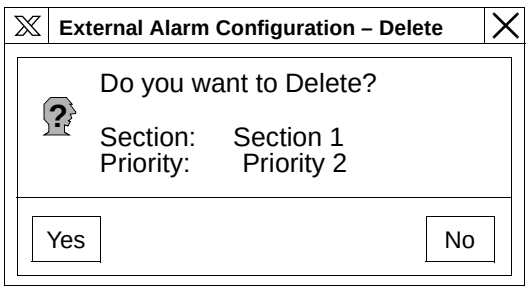


Figure 3-127. Delete external alarm configuration

  b. Click **Yes** and the selected section and priority combination is deleted.

     Click **No** and the selected section and priority combination is not deleted.

Try Sound… Select **Try Sound...** to activate the test facility for sound types used by Audible Treat.

- When selected, the following dialog box is displayed:

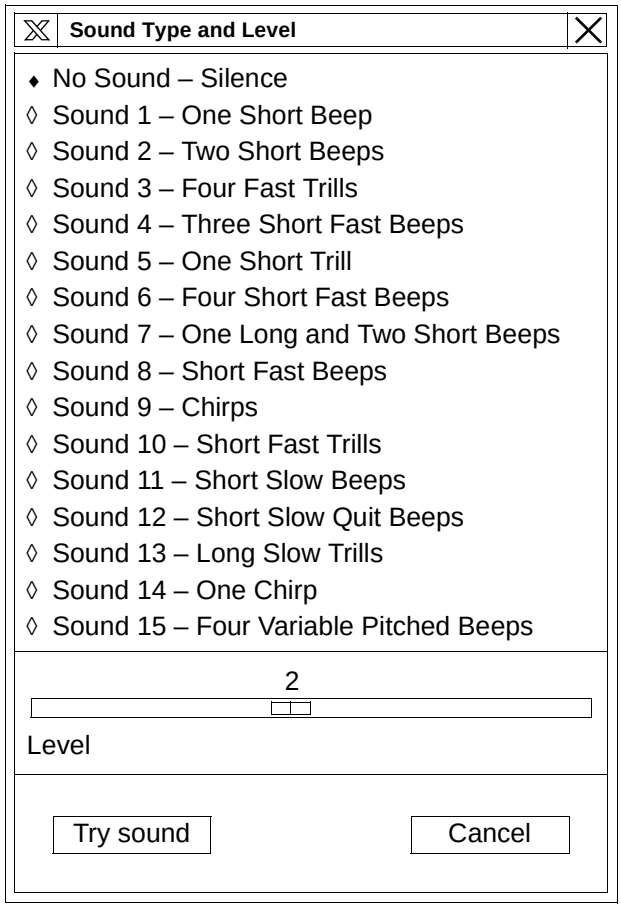

Sound Type and Level
♦ No Sound – Silence
◊ Sound 1 – One Short Beep
◊ Sound 2 – Two Short Beeps
◊ Sound 3 – Four Fast Trills
◊ Sound 4 – Three Short Fast Beeps
◊ Sound 5 – One Short Trill
◊ Sound 6 – Four Short Fast Beeps
◊ Sound 7 – One Long and Two Short Beeps
◊ Sound 8 – Short Fast Beeps
◊ Sound 9 – Chirps
◊ Sound 10 – Short Fast Trills
◊ Sound 11 – Short Slow Beeps
◊ Sound 12 – Short Slow Quit Beeps
◊ Sound 13 – Long Slow Trills
◊ Sound 14 – One Chirp
◊ Sound 15 – Four Variable Pitched Beeps
2
Level
Try sound
Cancel

Figure 3-128. External Alarm - Sound types and level setting for audible treat

The test facility makes it convenient to try different sounds before actually using them.

a. Select a sound by clicking on the name or on its button. To silence the continuous sounds (Sound 8 - Sound 13), select **No Sound - Silence** or **Cancel**.

b. Press the **Try sound** button.

c. Set the sound level with the scaled adjuster below the list of sound types. There are four levels (1 - 4). Default is 2. Note that the sound level affects the overall sound level in the operator station. The value set at the scale adjuster is the active sound level.

d. **Cancel** terminates the test of sound types and sound level settings.

Exit	Terminates the external alarm configuration.
Help	Not yet implemented.

3.3.14.5 Application Example

In the application examples that follow, the desired function is presented first, followed by an explanation of how the data base elements of the process object, event treat and external alarm configuration should be filled in.

Announcement from a process object

In this example, we want to make an announcement when an AI signal goes outside HI_LIM2 and LO_LIM2. A user event text is used which is described in Figure 3-108. The process object belongs to section 5. The announcement should be audible treatment and setting a remote DO.

Activate the **On-line Builder**. Provide an AI signal with alarm handling.

1. Press **F2** or click on the screen button D2 (AdvaBuild...) in the configuration dialog.
2. Press **F6** or click on the screen button D6 (On-line Builder).
3. Enter Password in the password box.
4. Select network and node for the Process Station containing the AI signal in the new box for Process Station selection.
5. Enter the command **MDB AI1.1**

   The data base element for AI is displayed on the screen.
6. Enter values as shown in Figure 3-129.

   ERR_TR points at EVENT4 (standard treatment).

   LIM_1_TR is set to 0, that is no event handling.

   LIM_2_TR points at EVENT20.

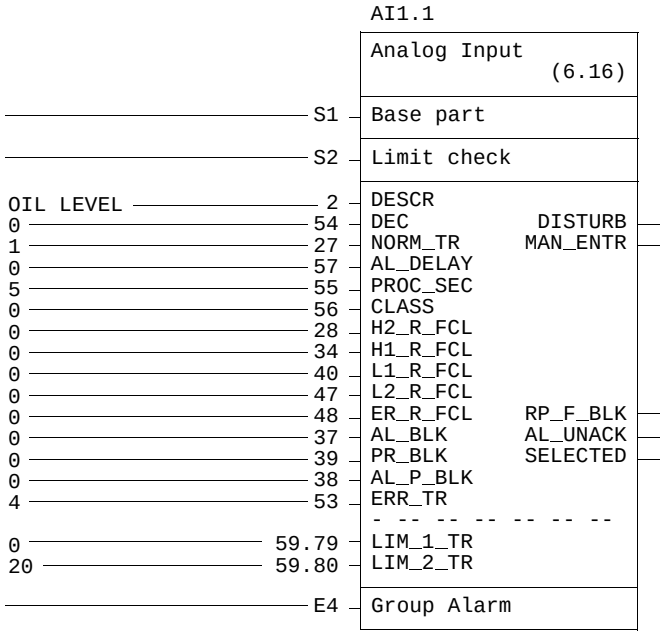


Figure 3-129. Data base element Analog Input

LIM_2_TR points at a database element, EVENT20, in the Event Treat file, which you can set by activating the **RTA Board Configuration**. Before the **RTA Board Configuration** configuration is entered exit the **On-line Builder**.

1. Press **F8** or click on the screen button D8 (Maintenance...) in the configuration dialog.
2. Press **F4** or click on the screen button D4 (RTA Board Config.).
3. Enter **MDB EVENT20**

   The data base element is displayed on the screen.
4. Enter the values as shown in Figure 3-130.

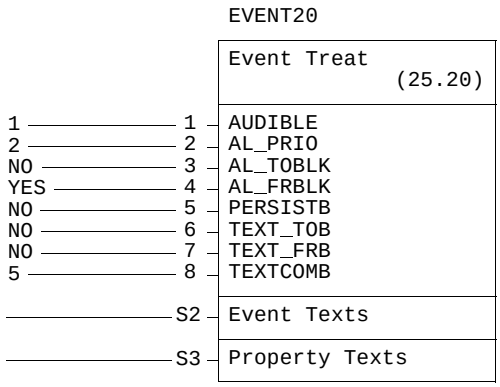


Figure 3-130. Changes in the data base element EVENT20

AUDIBLE 1 = audible alarm refers to the **Priority** column in the External Alarm configuration.

The last step to get the desired announcement is to enter the External Alarm configuration.

1. Press **F1** or click on the screen button D1 (AdvaCommand...) in the configuration dialog.
2. Press **F3** or click on the screen button D3 (External Alarm).
3. Add a new alarm from the file menu. The Configuration Window may have the appearance as in Figure 3-131 after the alarm is configured, provided that Process section 5 is stored and displayed as well as enabled for External Alarm in the active process delagation.

External Alarm Configurated Data

Section	Priority	Audible Treat	Local Outport	LocalTreat	Remote Outport
Default Section	Priority 1	Sound 1	-	-	-
Default Section	Priority 2	Sound 2	-	-	-
Default Section	Priority 3	Sound 4	-	-	-
Default Section	Priority 4	Sound 6	-	-	-
Section 5	Priority 1	Sound 4	–	–	DO1.9
Section 5	Priority 1	Sound			
System	Priority 1	Sound 9	-	-	-
Silence	Priority 1	–	–	–	–

Figure 3-131. Configuration window after process alarm is configured

Announcement from a system alarm

In this example we want to make an announcement when a system alarm has occurred. The text combinations for system alarms are described in the appendix section. The system alarm in this example announces that there is no contact with a node.

Activate the **RTA Board Configuration.** Set alarm announcement in the SYSMES_DESCR file.

1. Press **F8** or click on the screen button D8 (Maintenance...) in the configuration dialog.
2. Press **F4** or click on the screen button D4 (RTA Board Config.).
3. **FINS 219,39** (record number for the system alarm text 'No com. with node @')
4. **MPRO 12**
   0 = 1 (the audible property is set to 1)

The last step to get the desired announcement is to enter the External Alarm configuration.

1. Press **F1** or click on the screen button D1 (AdvaCommand...) in the configuration dialog.
2. Press **F3** or click on the screen button D3 (ExternalAlarm).
3. Change the row where **Section** is equal to **System.** The Configuration Window may have the appearance as in Figure 3-132 after the alarm is configured, provided that System Alarms are enabled for External Alarm in the active process delagation.

External Alarm Configurated Data

Section	Priority	Audible Treat	Local Outport	LocalTreat	Remote Outport
Default Section	Priority 1	Sound 1	-	-	-
Default Section	Priority 2	Sound 2	-	-	-
Default Section	Priority 3	Sound 4	-	-	-
Default Section	Priority 4	Sound 6	-	-	-
Section 5	Priority 1	Sound 4	-	-	-
System	Priority 1	Sound 9	-	-	DO1.9
Silence	Priority 1	-	-	-	-

Figure 3-132. Configuration Window after a system alarm is configured

In order to get an announcement on system alarms which are related to a process station the SYSMES_DESCR file in the actual Process Station has to be modified. The SYSMES_DESCR is modified with the **On-line Builder**.

3.3.15 Group Alarm

AdvaCommand…D4 Group Alarm

You can look at the Group Alarm function as a functional unit. Input data consists of events from the member signals and objects. Output data consists of event signals from the Group Alarm Object to the event processing subsystem; blocking and acknowledgment orders which are returned to the member objects and signals are another form of output. Figure 3-133 below gives an overview of the structure of the Group Alarm function. The Group Alarm Object and the member signals and object together form an Alarm Group.

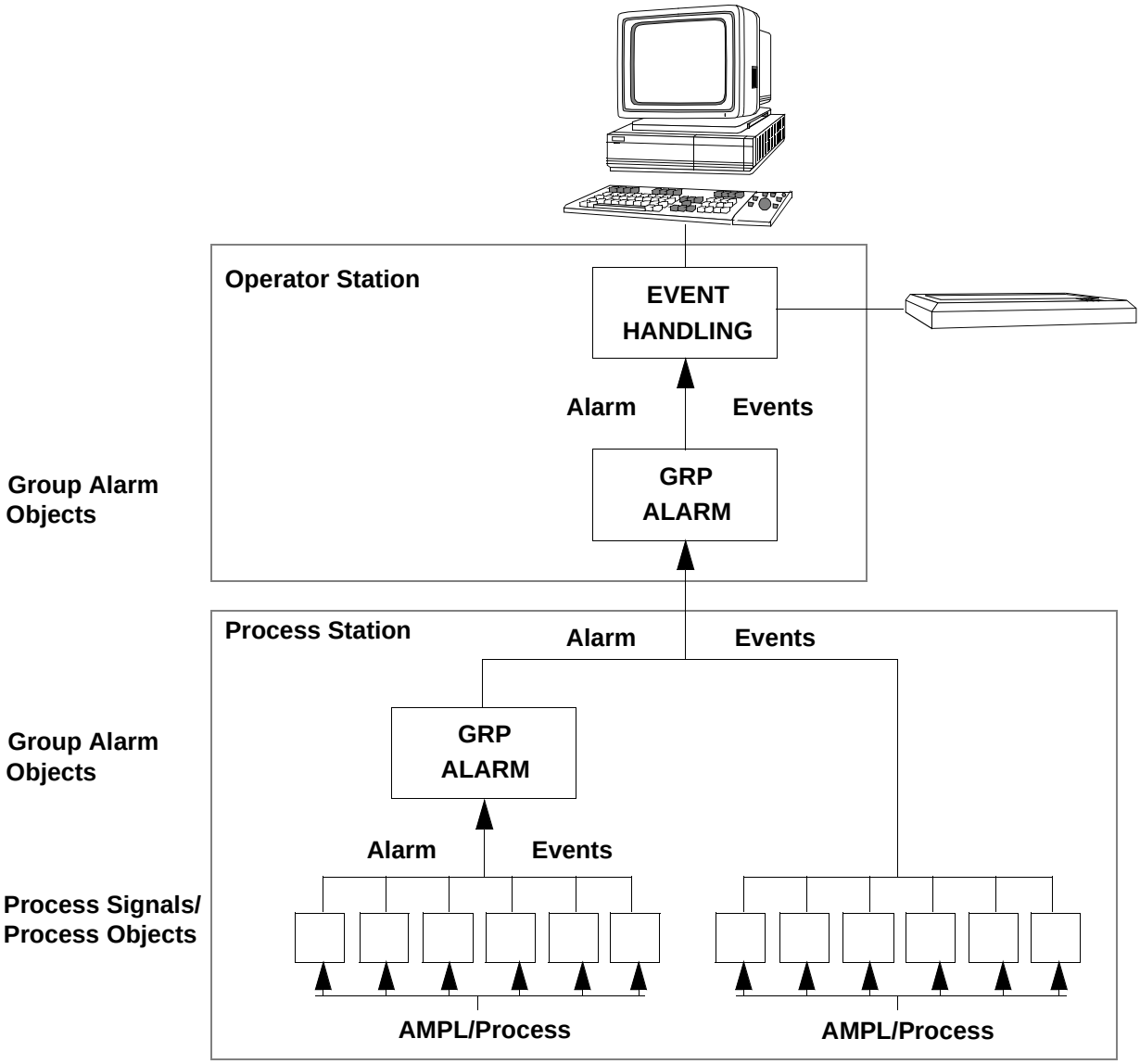


Figure 3-133. Overview of the group alarm function

In this context, the term "events" refers to process events and alarms. System events and alarms, on the other hand, cannot be tied to Alarm Groups. The status of Alarm Groups can be indicated in process displays, the Alarm List, Status Lists or by means of external alarm outputs.

3.3.15.1 Functions

The Group Alarm function consists of four basic parts, as follows:

- Grouping of Events and Alarms
- Group Blocking
- Auto Acknowledgment
- External Status Indication

The functions are described below.

Grouping of Events and Alarms

Interrelated process signals and objects can be grouped together for common event and alarm processing. This means that when a Group Member changes status, the status of the Group Alarm Object is also changed. The group can be defined as alarm-triggered or acknowledgment-triggered. Alarm triggering means that the group is affected when a member enters a state of alarm and when it returns to normal. Acknowledgment triggering means that the group is affected when an unacknowledged alarm is detected by a member and when it is acknowledged.

Group Blocking

Group blocking means that the processing of events and alarms for the member signals and objects is disabled or that process events and alarms are not reported to the event processing subsystem.

The difference between blocking the event processing for the members and blocking the reporting to the event processing is that in the former case, the alarm status of the members is set to normal, and no further reporting from them takes place as long as they are blocked.

Blocking the reporting to the event processing means that the current alarm status of the members remains and that the events and alarms are registered by the Group Alarm Object, but that they are not forwarded to the event processing.

Whether the event processing of the members is to be blocked or only the reporting is to be blocked is determined by the parameter BLK_CTRL in the data base element GRPALARM.

Group blocking can be requested by:

- Events from the Group Members
- PC program

In Table 3-9, the properties and connections of the different process signal and object types, which can be affected by group blocking, are listed.

Do not use the group blocking function when the Alarm Group is specified in redundant operator stations.

Table 3-9. Properties affected by group blocking

Process signal/ object type	Type of group blocking requested for:		
	Events	PC programs	Operators
DI	AL_P_BLK	AL_P_BLK	AL_BLK, PR_BLK
DI Calculated	AL_P_BLK	AL_P_BLK	AL_BLK, PR_BLK
AI	AL_P_BLK	AL_P_BLK	AL_BLK, PR_BLK
AI Calculated	AL_P_BLK	AL_P_BLK	AL_BLK, PR_BLK
PIDCON	ABL_H1L1 ABL_H2L2	ABL_H1L1 ABL_H2L2	BLK_H1L1, PBL_H1L1 BLK_H2L2, PBL_H2L2
PIDCONA	ABL_H1L1 ABL_H2L2	ABL_H1L1 ABL_H2L2	BLK_H1L1, PBL_H1L1 BLK_H2L2, PBL_H2L2
MANSTN	ABL_H1L1 ABL_H2L2	ABL_H1L1 ABL_H2L2	BLK_H1L1, PBL_H1L1 BLK_H2L2, PBL_H2L2
RATIOSTN	ABL_H1L1 ABL_H2L2	ABL_H1L1 ABL_H2L2	BLK_H1L1, PBL_H1L1 BLK_H2L2, PBL_H2L2
GENCON	AUTO_BLK	AUTO_BLK	AL_BLK,PR_BLK
GENBIN	AUTO_BLK	AUTO_BLK	AL_BLK, PR_BLK
GENUSD	AUTO_BLK	AUTO_BLK	AL_BLK, PR_BLK
GENNOV			AL_BLK, PR_BLK
MOTCON	AUTO_BLK	AUTO_BLK	AL_BLK, PR_BLK
VALVECON	AUTO_BLK	AUTO_BLK	AL_BLK, PR_BLK
MMCX	AUTO_BLK	AUTO_BLK	AL_BLK, PR_BLK
SEQ	DTALPBLK	DTALPBLK	DT_ALPBLK,DT_PRBLK
GRPALARM	AUTO_BLK	AUTO_BLK	AL_BLK, PR_BLK

For a detailed description of these properties, please refer to the manuals *Functional Units, Part 1* to *Functional Units, Part 7*, for the corresponding object types.

Group Blocking by Events

There are two variants of this type of group blocking:

1. Group blocking by blocking master

   By defining one or several members of the group as blocking masters, you can invoke blocking when any of these masters enters a state of alarm. When all masters have returned to normal, the Alarm Group is deblocked. The blocking masters themselves are not affected by group blocking. An example is shown in Figure 3-134 below.

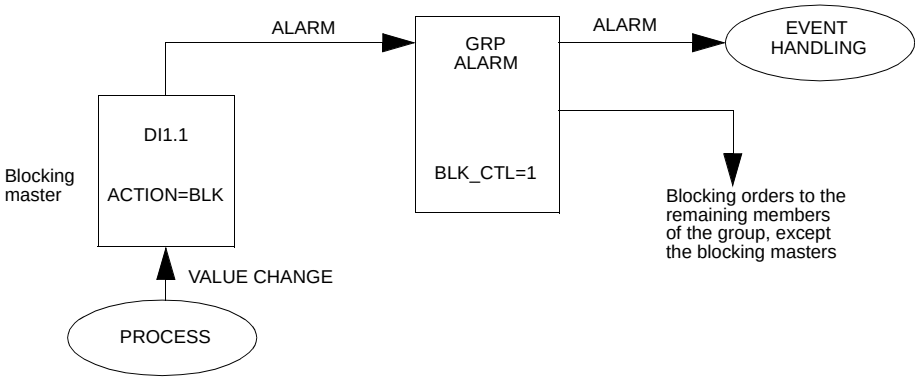


Figure 3-134. Group blocking by blocking master

2. Group blocking by primary alarm

   When you set the parameter First-Up high, the group is blocked when any of the members enters a state of alarm. The member requesting blocking is not affected by the subsequent blocking. When this member returns to normal, the group is deblocked. See the example in Figure 3-135 below.

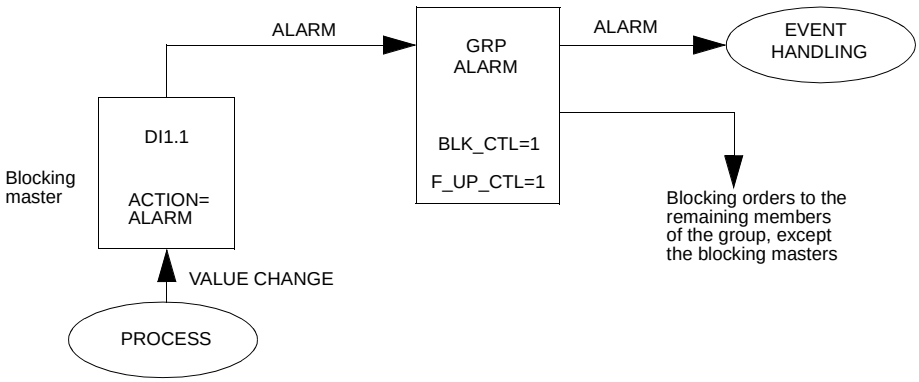


Figure 3-135. Group blocking by the primary alarm

Group Blocking by PC Program

You can enable program controlled group blocking by setting the parameter PREV_PGM (of the Group Alarm Object) high. See the example in Figure 3-136 below.

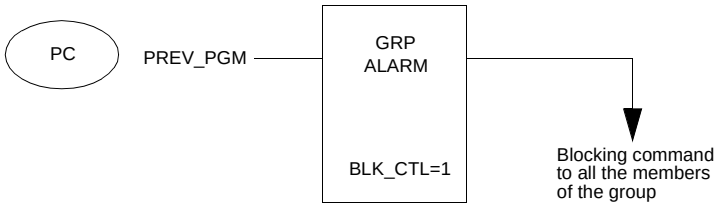


Figure 3-136. Group blocking by a PC program

Auto Acknowledgment

Normally, you can acknowledge an alarm from a process display, object display or Alarm List by pointing at the representation of the object concerned and then pressing **ACKNOWLEDGE**. An acknowledgment command is then sent to the object.

You can, however, configure the Group Alarm function to automatically acknowledge both the Group Members and the Group Alarm Object itself.

The following alternative auto acknowledgment schemes are available.

- Auto acknowledgment of the Group Alarm Object is obtained when you set the property G_A_ACK of the data base element GRPALARM high.
  - Alarm-triggered groups can be auto-acknowledged when all the member objects return to normal.
  - Acknowledgment-triggered groups can be auto-acknowledged when all the member objects are acknowledged.

  This function cannot be used together with the function for auto acknowledgment of member objects described below.
- Auto acknowledgment of the member objects can also be obtained when you define one of the members of the group as acknowledgment master. When the master changes to abnormal state, auto acknowledgment takes place. This function cannot be used together with the function for auto acknowledgment of the Group Alarm Object described above.
- The member objects and signals can be auto-acknowledged when the superior Group Alarm Object is acknowledged. This mode of operation is obtained when you set the property M_A_ACK of the data base element GRPALARM high.

Do not use the auto acknowledgment function when the Alarm Group is specified in redundant operator stations.

External Status Indication

You can tie two digital outputs to every Alarm Group. If the Alarm Group resides in an MasterPiece 200/1 node or Advant Controller 400 Series, the digital outputs must be located in the same node. If the Alarm Group resides in an operator station, the digital outputs can be located in any of the nodes in the control network. One of the outputs is active as long as the Alarm Group is in a state of alarm, that is it mirrors the state of the data base element output DISTURB on the object GRPALARM. The other output is active as long as the Alarm Group contains an unacknowledged alarm. Consequently, it mirrors the state of the output AL_UNACK on the data base element.

By using this function together with an input signal, defined in the group as an acknowledgment master, you can implement an alarm annunciator panel by means of a PC program. See Figure 3-137 below.

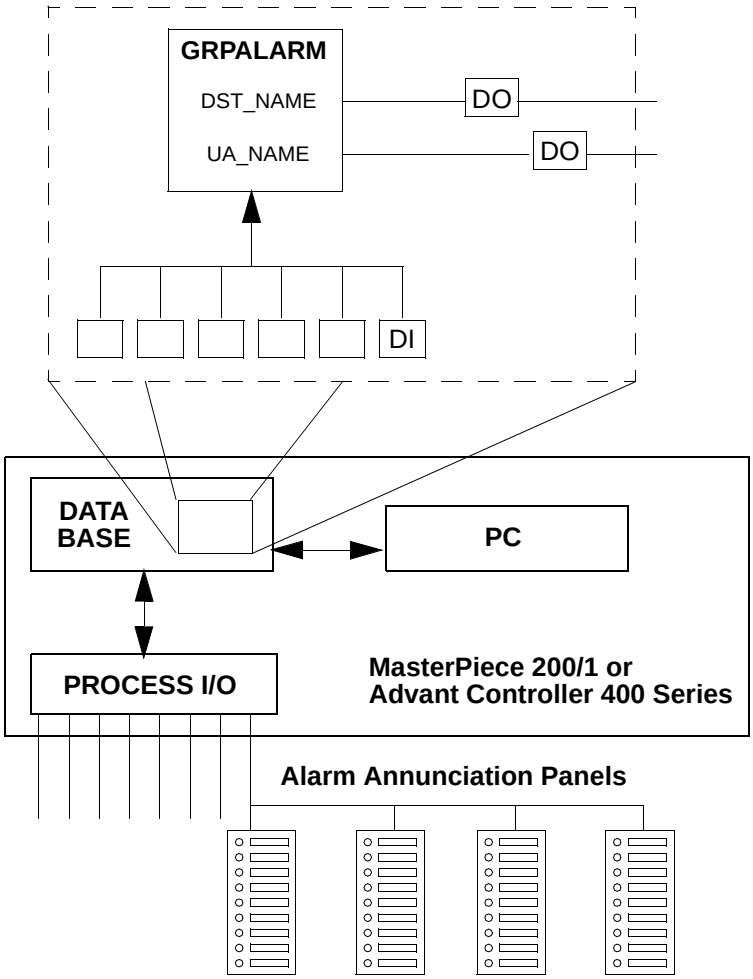


Figure 3-137. Alarm annunciation by external status indicator outputs

3.3.15.2 Event Handling

To specify the mode of event processing for Group Alarm Objects, two properties in the data base element GRPALARM must be defined. The property DIST_TR defines the processing of status changes of the Group Alarm Object, while PREV_TR defines the event processing of group blocking.

These two parameters are pointers to Event Treat elements and must be given suitable pointer values. When allocated the value 0, all event processing is disabled. The recommended value for DIST_TR is 2, which gives both event and alarm reporting. The recommended value for PREV_TR = 1, which means event processing only.

3.3.15.3 Alarm Group Configuration

You can configure Alarm Groups either by means of the Group Alarm data base elements (GRPALARM and GRPMEMB) or through a Configuration Window in the operator station.

Before you can begin **configuration from operator station**, you must create the Group Alarm Object, allocate it a name and activate it either using the command CRDB, the call name being GRPALARM, or by means of data base source code translation.

The Group Alarm Configuration Window in the operator station displays all configurable parameters in an Alarm Group. From this window, you can add new Group Members, remove existing members and change properties of existing Group Members. You can also change the configurable properties in the Group Alarm Object.

You can enter the Group Alarm Configuration Window in two ways:

- Click on **System Config** under the item **System Display Keys** in the pop-up menu **Operation**.

  a. Press **F1** or click on the screen button D1 (AdvaCommand…) in the configuration dialog.

  b. Press **F4** or click on the screen button D4 (Group Alarm).

  or

- Press **F5** or click on the screen button D5 in the Group Alarm Process Dialog.

The following display is presented:

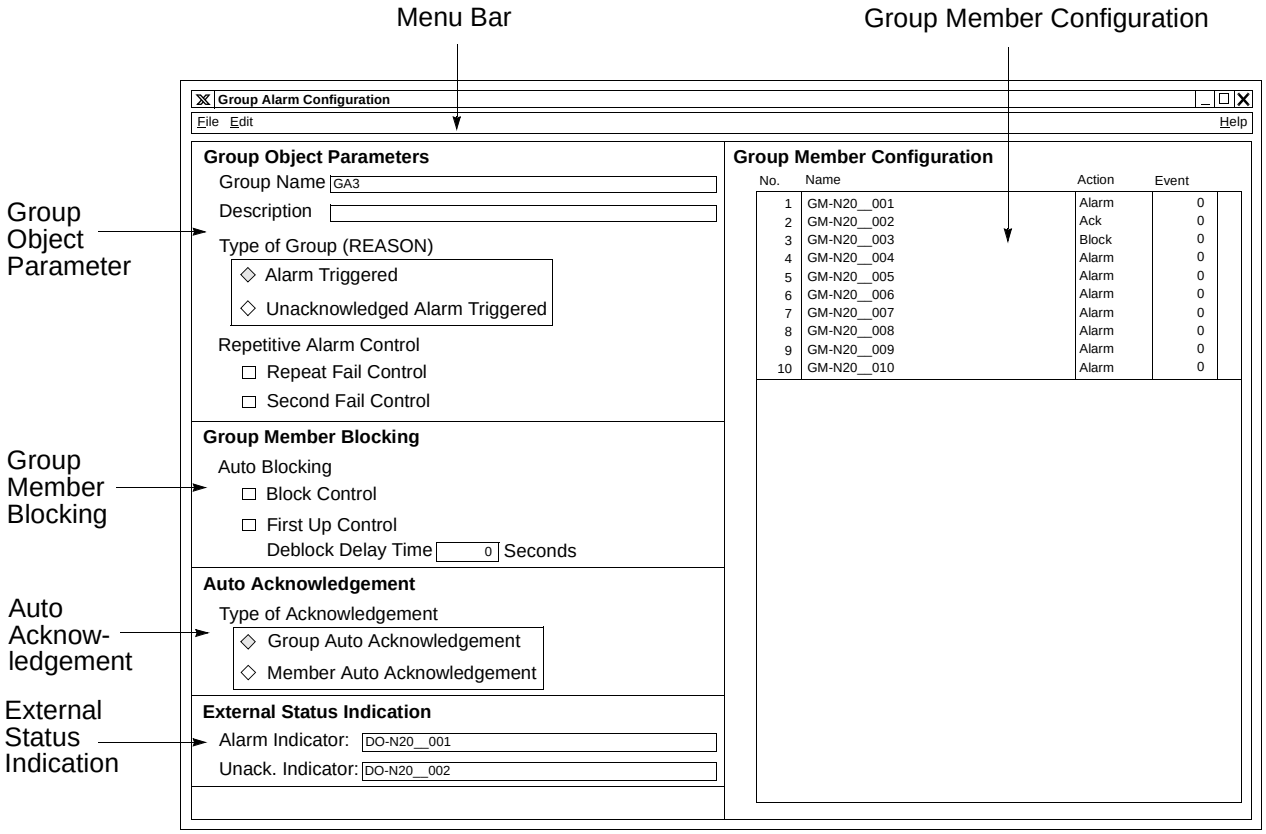


Figure 3-138. Configuration window

The Configuration Window is divided into six main areas:

Group Object Parameter	Contains parameters related to the Group Alarm Object.
Group Member Blocking	Contains parameters related to blocking events from Group Members.
Auto Acknowledgment	Contains parameters related to automatic alarm acknowledgment.
External Status Indication	Contains information regarding digital output object used for indication of the alarm status of the Group Alarm.
Group Member Configuration	Contains Group Members and Group Member specific parameters.
Menu Bar	Contains options to activate printouts, member configuration and help functions.

Figure 3-138 shows the Configuration Window when authority (max dialog) is set, and all inputs are enabled. If no input is possible (min dialog) to an input field, the input field is dimmed, and it no longer appears three-dimensional.

To prevent most parameters from being changed from the display, interlock them through the property ORD_BLK in the Group Alarm data base element. Attempts to change an interlocked parameter fail. An error dialog box indicating this failure appears on the screen.

Group Object Parameters

The Group Object Parameter area includes parameters related to the Group Alarm Object. The configurable parameters in this area are described below.

Group Name

In this input field, the object name of the Group Alarm Object is specified. The attributes of this field are dependent on how you enter the Configuration Window:

- If you enter the Configuration Window from the process dialog, the field displays the object name of the currently selected Group Alarm Object. No input is possible. To indicate this, the input field is not three-dimensional.
- If you enter the Configuration Window from the Configuration Dialog, you must specify the Group Alarm Object to be configured in this field. When you enter the name of an existing Group Alarm Object in this field, this object is selected, and all parameters in the Configuration Window are updated with the corresponding parameters from that object. The object is de-selected if you specify a new object name, if you enter an empty string or if you close the Configuration Window.

Description

The Description of the Group Alarm Object is specified in this input field. It corresponds to the DESCR property in the GRPALARM data base element. The description can consist of a maximum of 28 characters.

Type of Group

To specify the Type of Group, click on the toggle button labeled:

- **Alarm Triggered** if you want an Alarm Triggered group.
- **Unacknowledged Alarm Triggered** if you want an Unacknowledged Alarm Triggered group.

These toggle buttons have radio behavior, that is when you activate one button, the other one is automatically de-activated. A pressed button indicates active function. Type of Group corresponds to the REASON property in the data base element GRPALARM. Note that it is allowed to change Type of Group only if the group has no connected members, or if the node holding the Group Alarm object is in Configuration mode.

The property is interlockable through ORD_BLK.

You can change group type only when the node holding the Group Alarm Object is in configuration mode, or when members are not yet connected to the Alarm Group. If you attempt to specify group type when it is not changeable, an error message is displayed.

Repeat Fail Control

Click this toggle button to activate/deactivate the function to block repetitive alarms from the Alarm Group. A pressed button indicates that the function is active. Repeat Fail Control corresponds to the RP_F_CTL property in the data base element GRPALARM.

This property is interlockable through ORD_BLK.

Second Fail Control

Click this toggle button to activate/deactivate the function to block alarm and event treatment after arrival of the first member alarm. A pressed button indicates that the function is active. Second Fail Control corresponds to the SC_F_CTL property in the data base element GRPALARM.

This property is interlockable through ORD_BLK.

Group Member Blocking Parameters

The Group Member Blocking area includes parameters related to blocking Group Member event treatment. The configurable parameters in this area are described below.

Block Control

Click this toggle button to activate/deactivate the function for alarm blocking of Group Members. A pressed button indicates that the function is active. Block Control corresponds to the BLK_CTL property in the data base element GRPMEMB.

This property is interlockable through ORD_BLK.

First Up Control

Click this toggle button to activate/deactivate the function for processing the first alarm or event from any Group Member only. A pressed button indicates that the function is active. First Up Control corresponds to the F_UP_CTL property in the data base element GRPMEMB.

This property is interlockable through ORD_BLK.

Deblock Delay Time

Specify the Deblock Delay Time property in this input field. This is the delay time used when deblocking event handling is activated. The delay time is in the range 0-32000 seconds. Deblock Delay Time corresponds to the DBLK_D_T in the GRPALARM data base element.

This property is interlockable through ORD_BLK.

Auto Acknowledgment Parameters

The Auto Acknowledgment area includes parameters related to automatic acknowledgment of Alarm Group (Group Auto Acknowledgment) and Group Members (Member Auto Acknowledgment). You cannot have both of these functions active in an Alarm Group. Therefore, if you activate one function while the other is active, the active function is automatically deactivated.

Group Auto Acknowledgment

Click this toggle button to activate/deactivate the function for automatic acknowledgment of the Alarm Group. If you activate the toggle button while the Member Auto Acknowledgment function (see below) is active, this function is deactivated. Group Auto Acknowledgment corresponds to the G_A_ACK (Group Auto Acknowledgment) property in the data base element GRPALARM.

This property is interlockable through ORD_BLK.

Member Auto Acknowledgment

Click this toggle button to activate/deactivate the function for automatic acknowledgment of all members in the group when the group is acknowledged. If you activate the toggle button while the Group Auto Acknowledgment function (see above) is active, this function is deactivated. Member Auto Acknowledgment corresponds to the M_A_ACK (Member Auto Acknowledgment) property in the data base element GRPMEMB.

This property is interlockable through ORD_BLK.

External Status Indication Parameters

In the External Status Indication area, digital outputs mirroring alarm status of the Alarm Group are specified.

Alarm Indicator

In this input field, the object name of a digital output object mirroring the alarm status of the group is specified. Alarm Indicator corresponds to the DST_NAME property in the data base element GRPALARM.

This property is interlockable through ORD_BLK.

Unack. Indicator

In this input field, the object name of a digital output object mirroring the unacknowledged alarm status of the group is specified. Alarm Indicator corresponds to the UA_NAME property in the data base element GRPALARM.

This property is interlockable through ORD_BLK.

Group Member Configuration Area

In the Group Member Configuration area, Group Members and Group Member specific parameters are displayed. A scrolled window holds information regarding the connected Group Members. You can use the scrollbar to scroll through the visible part of the Group Members. The Group Member information is organized in four columns:

No.

In this column, the Group Member numbers are displayed.

Name

In this column, the names of the connected Group Member objects are displayed. Name corresponds to the OBJECT property in the data base element GRPMEMB.

Action

This column indicates the effect the Group Member has on the group when an event occurs. The following alternatives are available:

Alarm	The member affects the alarm status of the group.
Ack.	The member is defined as an acknowledgment master in the group.
Block	The member is defined as a blocking master in the group.
Passive	The member does not affect the group status.

Action corresponds to the ACTIONx property in the data base element GRPMEMB.

Event

This column indicates which events are to be processed by the group. The following alternatives are available:

- The value **0** defines that all events are processed.
- A value other than **0** defines that only events corresponding to the Event Treat pointer are processed by the group.

Event corresponds to the EVENTx property in the data base element GRPMEMB.

Menu Bar

The Menu Bar contains three different menus, **File**, **Edit** and **Help**. The menus are described below.

File

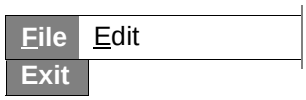


Figure 3-139. File menu

Exit Closes the Configuration Window.

Edit

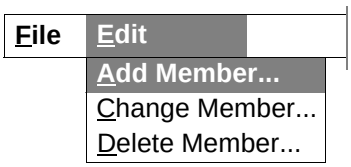


Figure 3-140. Edit menu

Add Member Invokes the dialog box to enter new Group Members.

- When selected, a dialog box, as shown below, is displayed.

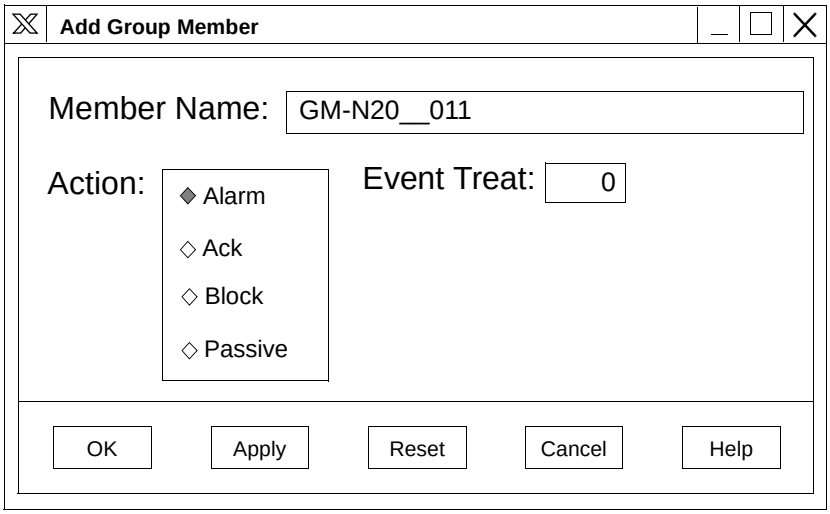


Figure 3-141. Add Group Member dialog box

Adding a new member involves specifying the member name of the new member object, specifying the action and event settings, and finally activating the member addition. The steps are described below.

Member Name

In this field, you specify the name of the new Group Member object. The previously specified member name is displayed as a default.

Action

Click on one of the toggle buttons to specify the Action property. The toggle buttons are specified with radio behavior, that is when you activate one of the buttons, all the other buttons are deactivated. The previous setting of the action property is the default value. The alternatives are:

– **Alarm**

  The member affects the alarm status of the group.

– **Ack.**

  The member is defined as an acknowledgment master in the group.

– **Block**

  The member is defined as a blocking master in the group.

– **Passive**

  The member does not affect the group status.

Action corresponds to the ACTIONx property in the data base element GRPMEMB.

Action is interlockable through ORD_BLK.

Event Treat

The Event property is specified when you enter the desired value in the text field. The following alternatives are available:

– The value **0** defines that all events are processed.

– A value other than **0** defines that only events with a corresponding Event Treat pointer are processed by the group.

Event corresponds to the EVENTx property in the data base element GRPMEMB.

Event is interlockable through ORD_BLK.

OK

Adds the specified member to the Alarm Group. The dialog box is closed.

Apply

Adds the specified member to the Alarm Group. The dialog box remains open, and you can add another member.

Reset

Resets the dialog box, and all settings are set to default values, that is:

– Member Name is cleared

– Action is set to Alarm

– Event is set to 0.

Cancel

Closes the dialog box without adding the member specified in the dialog box.

Help

Provides general information about adding Group Members.

Change Member Invokes the dialog box for changing parameters for an existing Group Member.

- When selected, a dialog box, as shown below, is displayed.

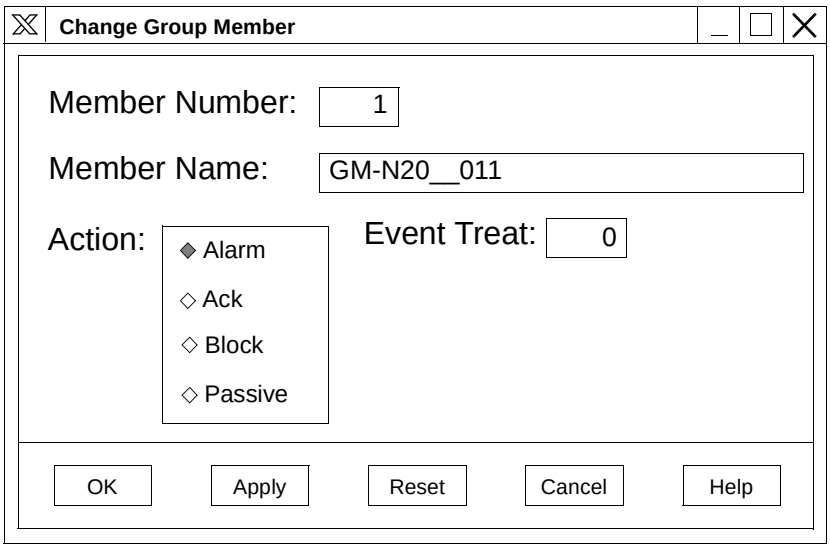


Figure 3-142. Change Group Member dialog box

Changing properties for a Group Member involves specifying which member to change, then specifying the new settings, and finally activating the change. The different steps are described below.

Member Number

In this field, you specify the Group Member to be changed by entering the corresponding member number in this field. You can also select the Group Member to be changed in the Group Member area in the Configuration Window, see Figure 3-138. You simply position the cursor on the member name of the member to be changed, and click the mouse button. The selected member name is highlighted, and the dialog box is updated according to the settings in this member.

Name

In this field, the name of the new Group Member object is specified. Change of member name replaces the existing member object with the new member object, that is the old member is removed from the group.

Action

To specify the Action property, click on one of the toggle buttons. The toggle buttons are specified with radio behavior, that is when you activate one button, all the other buttons are deactivated. The alternatives are:

– **Alarm**

  The member affects the alarm status of the group.

– **Ack.**

  The member is defined as an acknowledgment master in the group.

– **Block**

  The member is defined as a blocking master in the group.

– **Passive**

  The member does not affect the group status.

Action corresponds to the ACTIONx property in the data base element GRPMEMB.

Action is interlockable through ORD_BLK.

Event Treat

The Event property is specified when you enter the desired value in the text field. The following alternatives are available:

– The value **0** defines that all events are processed.

– A value other than **0** defines that only events with a corresponding Event Treat pointer are processed by the group.

Event corresponds to the EVENTx property in the data base element GRPMEMB.

Event is interlockable through ORD_BLK.

OK

The specific member is changed. The dialog box is closed.

Apply

The specific member is changed. The dialog box remains open.

Reset

Click the **Reset** push button to reset the dialog box. All settings are set according to the selected member.

Cancel

Click the **Cancel** push button to close the dialog box without applying the changes specified in the dialog box.

Help

Click the **Help** push button for general information regarding change of Group Members.

Delete Member Invokes the dialog box for removing Group Members from the group.

- When selected, a dialog box, as shown below, is displayed.

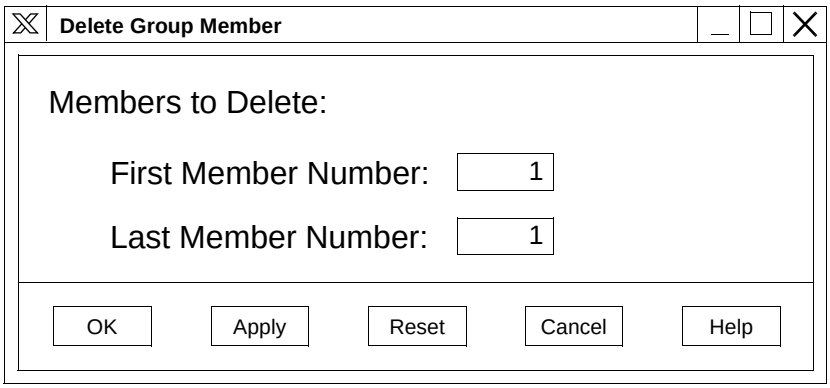


Figure 3-143. Delete Group Member dialog box

Deleting members from a group involves specifying a member or a contiguous range of members to delete, and finally activating the deletion. The different steps are described below.

You can select the Group Member to be deleted in the Group Member area in the Configuration Window, see Figure 3-138. You can specify Group Member(s) to delete in two ways:

– If you want to delete a **single member**, position the cursor on the member name you want to delete and click the mouse button.

– If you want to delete **more than one member**, position the cursor at the first member name you want to delete, press the mouse button and then drag the mouse to the last member to delete. The selected members are highlighted, and the range of members to be deleted is updated in the fields in the dialog box.

First Member Number

In this field, the member number of the first member object to be removed from the group is displayed. You can also enter the member number of the first member to be deleted.

Last Member Number

In this field, the member number of the last member object to be removed from the group is displayed. You can also enter the member number of the last member to be deleted.

OK

Removes the specified member(s) from the group if the specified range of members to delete exists in the group. The dialog box is closed.

Apply

Removes the specified member(s) from the group if the specified range of members to delete exists in the group. The dialog box remains open.

Reset

Resets the dialog box.

Cancel

Closes the dialog box without deleting the members specified in the dialog box.

Help

Provides general information regarding deleting Group Members.

Help

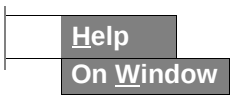


Figure 3-144. Help menu

On Window Provides general information about the Group Alarm configuration.

3.3.15.4 Error Messages

During Group Alarm Configuration, if you perform an illegal operation, you are notified about the mistake through an error dialog box, as shown in Figure 3-145.

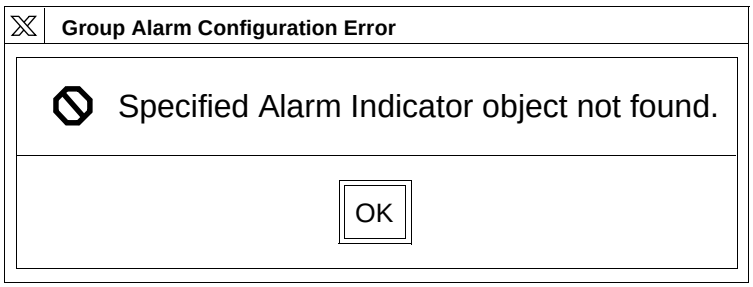


Figure 3-145. Error dialog box

By pressing the 'OK' button, the error message is acknowledged, and the dialog box is closed.

3.3.15.5 Data Base Element GRPALARM

Summary

The GRPALARM data base element is used to configure the GROUP ALARM function on the RTA board in the operator station, the MasterPiece 200/1 or the Advant Controller 400 Series.

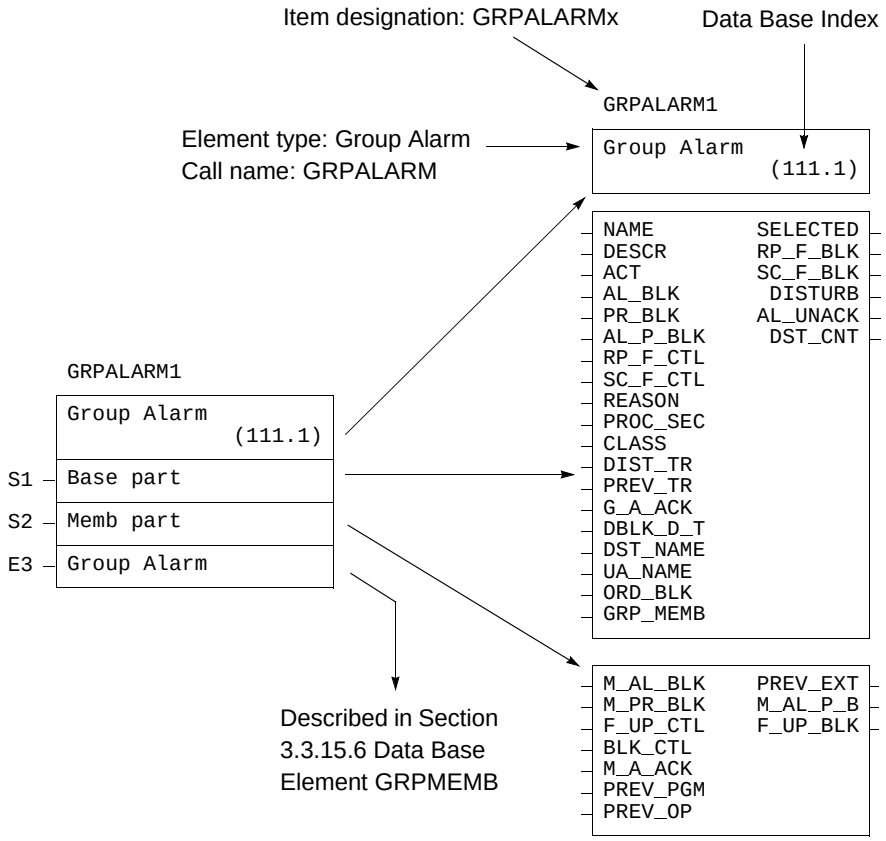


Figure 3-146. Data base element GRPALARM

Base Part

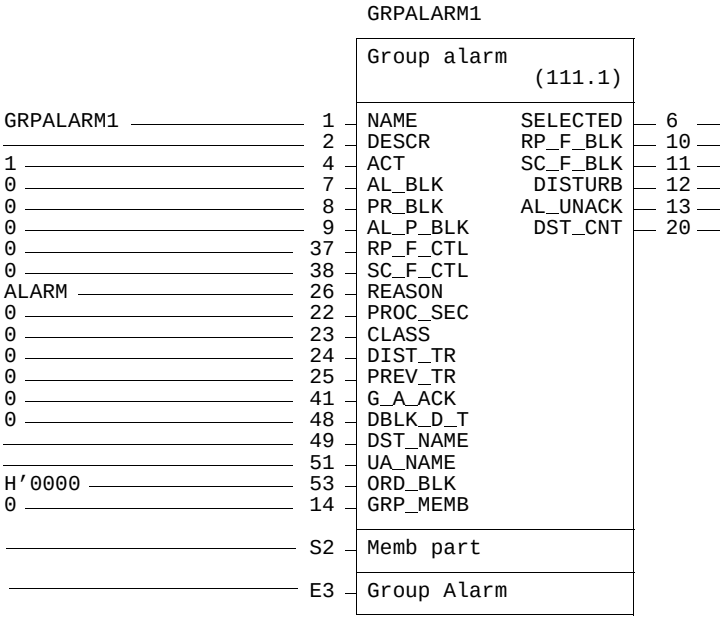


Figure 3-147. Data base element GRPALARM - Base part

NOTE

The name must be unique among all nodes! However, redundant operator station are exceptions; in those cases, the name does not have to be unique.

Table 3-10. Data base element GRPALARM - Base part properties

Terminal No	Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
1	NAME	user	GRP ALARMx	–	Each Group Alarm must have a unique **NAME**.	Max. 20 characters. Spaces not allowed.
2	DESCR	user/ dialog	–	–	This **DESCR**iption of the alarm group will be used in pictures and lists in operator station.	Any information regarding the alarm group may be entered. Max. 20 characters.
4	ACT	user	1	–	1=The alarm group is **ACT**ive. 0=The alarm group is spare.	Modification is only allowed in configuration mode or when no signals/objects are connected to the group.
7	AL_BLK	dialog	0	–	Flag for **BL**oc**K**ing of **AL**arm indication and event handling in operator station.	–

Table 3-10. Data base element GRPALARM - Base part properties (Continued)

Terminal No	Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
8	PR_BLK	dialog	0	–	Flag for **BL**oc**K**ing of **PR**intout in operator station.	–
9	AL_P_BLK	PC/ system	0	B(r)	**AL**arm **P**eriod **BL**oc**K** flag for temporary blocking of alarm indication and event handling in operator station.	–
37	RP_F_CTL	user/ dialog	0	–	**R**e**P**eat **F**ail **C**on**T**ro**L**. Request for reduced number of reports of repetetive alarms.	–
38	SC_F_CTL	user/ dialog	0	–	**S**e**C**ond **F**ail **C**on**T**ro**L**. Request for blocking the alarm and event handling due to a second fail.	–
26	REASON	user/ dialog	ALARM	–	Defines which type of event the alarm group shall handle.	ALARM=The alarm group is affected when a signal connected to the group enters a state of alarm. This type of alarm group is called Alarm-Triggered Group. UNACK=The alarm group is affected when a signal connected to the group is unacknowledged. This type of alarm group is called Unack-Triggered Group.
22	PROC_SEC	user	0	I(r/w)	**PROC**ess **SEC**tion is used for sectioning the alarm handling. Section numbers 1-16.	0=no sectioning. The object may be presented in lists. -1=the object cannot be selected and cannot be presented in lists.
23	CLASS	user	0	I(r/w)	**CLASS** subdivides process section. Used by status list function in operator station.	–
24	DIST_TR	user	0	–	**DIST**urbance **TR**eatment. Pointer to the data base element in EVENT_TREAT which defines the event handling for alarm and events.	Recommended settings: 0=No event reporting 1=Event reporting 2=Event reporting including alarm handling
25	PREV_TR	user	0	–	**PREV**ent **TR**eatment. Pointer to the data base element in EVENT_TREAT which defines the event handling for blockings.	Recommended settings: 0=No event reporting 1=Event reporting 2=Event reporting including alarm handling

Table 3-10. Data base element GRPALARM - Base part properties (Continued)

Terminal No	Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks		
41	G_A_ACK	user/ dialog	0	–	**G**roup **A**uto **ACK**nowledge. The group alarm is automatically acknowledged: – For Alarm-Triggered Group: when all members in the group have changed status to normal. – For Unack-Triggered Group: when all members in the group have changed status to acknowledged.	–		
48	DBLK_D_T	user/ dialog	0	–	**DeBL**oc**K D**elay **T**ime. Delay time in seconds. Used when a deblocking of the event handling is activated by PC-program or a signal defined as a blocking activator.	–		
49	DST_NAME	user/ dialog	–	–	**DiST**urbance **NAME**. Name of the DO signal that mirror's the status of DISTURB (Disturbance).	In Advant Controller 400 Series system the DO signal must be located in own node.		
51	UA_NAME	user/ dialog	–	–	**U**n**A**cknowledge **NAME**. Name of the DO signal that mirror's the status of AL_UNACK (Alarm unacknowledged).	In Advant Controller 400 Series system the DO signal must be located in own node.		
53	ORD_BLK	user	H'0000	–	**BL**oc**K**ing of manual **ORD**ers. All available orders are represented by a flag in ORD_BLK. A set flag indicates a blocked order. The default value contains no set flags. The ORD_BLK table shows how to compute the ORD_BLK value. New value can be entered as a hexadecimal string e.g H'0040 or as a binary string, e.g B0000 0000 0100 0000, for blocking of order M_PR_BLK.	Order	Bit value	Def. Hex. value
						REASON	1	0
						AL_BLK	2	
						PR_BLK	4	
						BLK_CTL	8	
						PREV_OP	1	0
						M_AL_BLK	2	
						M_PR_BLK	4	
						RP_F_CTL	8	
						SC_F_CTL	1	0
						F_UP_CTL	2	
						G_A_ACK	4	
						M_A_ACK	8	

Table 3-10. Data base element GRPALARM - Base part properties (Continued)

Termi-nal No	Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks		
						Order	Bit value	Def. Hex. value
						DBLK_D_T DST_NAME UA_NAME	1 2 4	0
14	GRP_MEMB	system	0	B(r)	Flag indicating that the alarm group is a member of another superior group, located in the same node.	–		
6	SELECTED	system	–	–	Flag indicating whether the element has been **SELECTED** by the operator station operator for dialog.	–		
10	RP_F_BLK	system	–	–	**R**e**P**eat **F**ail **BL**oc**K**. Flag indicating that a repeating alarm is present in the element but that the indication has been blocked.	–		
11	SC_F_BLK	system	–	–	**S**e**C**ond **F**ail **BL**oc**K**. Flag indicating that the event handling is blocked due to second fail.	–		
12	DISTURB	system	–	–	**DISTURB**ance. Flag indicating whether a state of alarm exists in the alarm group.	–		
13	AL_UNACK	system	–	–	Flag indicating whether an **UNACK**nowledged **AL**arm exists in the alarm group.	–		
20	DST_CNT	system	–	I(r)	**D**i**ST**urbance **C**ou**NT**er. Shows the number of: –Alarm-Triggered Group: active alarms in the alarm group. –Unack-Triggered Group: unacknowledged alarms in the alarm group.	–		

Member Part

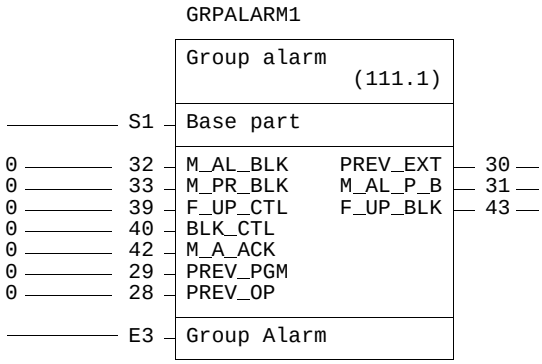


Figure 3-148. Data base element GRPALARM - Member part

Table 3-11. Data base element GRPALARM - Member part properties

Terminal No	Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
32	M_AL_BLK	dialog	0	–	**M**ember **AL**arm **BL**oc**K**. Alarm and eventhandling are blocked for all members in the alarm group.	–
33	M_PR_BLK	dialog	0	–	**M**ember **PR**int **BL**oc**K**. Printouts in operator station are blocked for all members in the alarm group.	–
39	F_UP_CTL	user/ dialog	0	–	**F**irst **UP** **C**on**T**ro**L**. When active only the first alarm or event from any member in the alarm group will be indicated in the operator station.	1=Active 0=Not active
40	BLK_CTL	user/ dialog	0	–	**BL**oc**K** **C**on**T**ro**L**. When active all members in the alarm group will be blocked (using AL_P_BLK) when PREV_EXT or PREV_PGM is set.	1=Active 0=Not active
42	M_A_ACK	user/ dialog	0	–	**M**ember **A**uto **ACK**nowledge. When active all members in the alarm group will automatically be acknowledged when the alarm group is acknowledged.	1=Active 0=Not active
29	PREV_PGM	PC	0	B(r)	The processing of events from the members in the alarm group are temporary prevented by PC-program.	See also terminal BLK_CTL.

Table 3-11. Data base element GRPALARM - Member part properties (Continued)

Termi-nal No	Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
28	PREV_OP	dialog	0	–	Flag indicating that the processing of events from the members in the alarm group are prevented by the operator.	–
30	PREV_EXT	system	–	–	Flag indicating that the processing of events from the members in the alarm group are prevented by blocking master or due to FIRST_UP indication from any member in the alarm group.	See also terminal BLK_CTL.
31	M_AL_P_B	system	–	–	Flag indicating that the processing of events from the members is blocked due to the fact that BLK_CTL was active when PREV_PGM or PREV_ EXT was set. The PREV_PGM or PREV_EXT which is set, indicates by whom.	–
43	F_UP_BLK	system	0	–	Flag indicating that the processing of events from the members is blocked on grounds of FIRST_UP.	–

3.3.15.6 Data Base Element GRPMEMB

Summary

The GRPMEMB data base element is used to define how the process signal/object affects the GRPALARM element to which the signal is connected. To access the GRPMEMB element, expand the Group Alarm part included in the following data base elements: AI, DI, PIDCON, RATIOSTN, MANSTN, GENCON, GENNOV, GENUSD, MOTCON, VALVECON, SEQ and GRPALARM. This is the only possible way to access GRPMEMB.

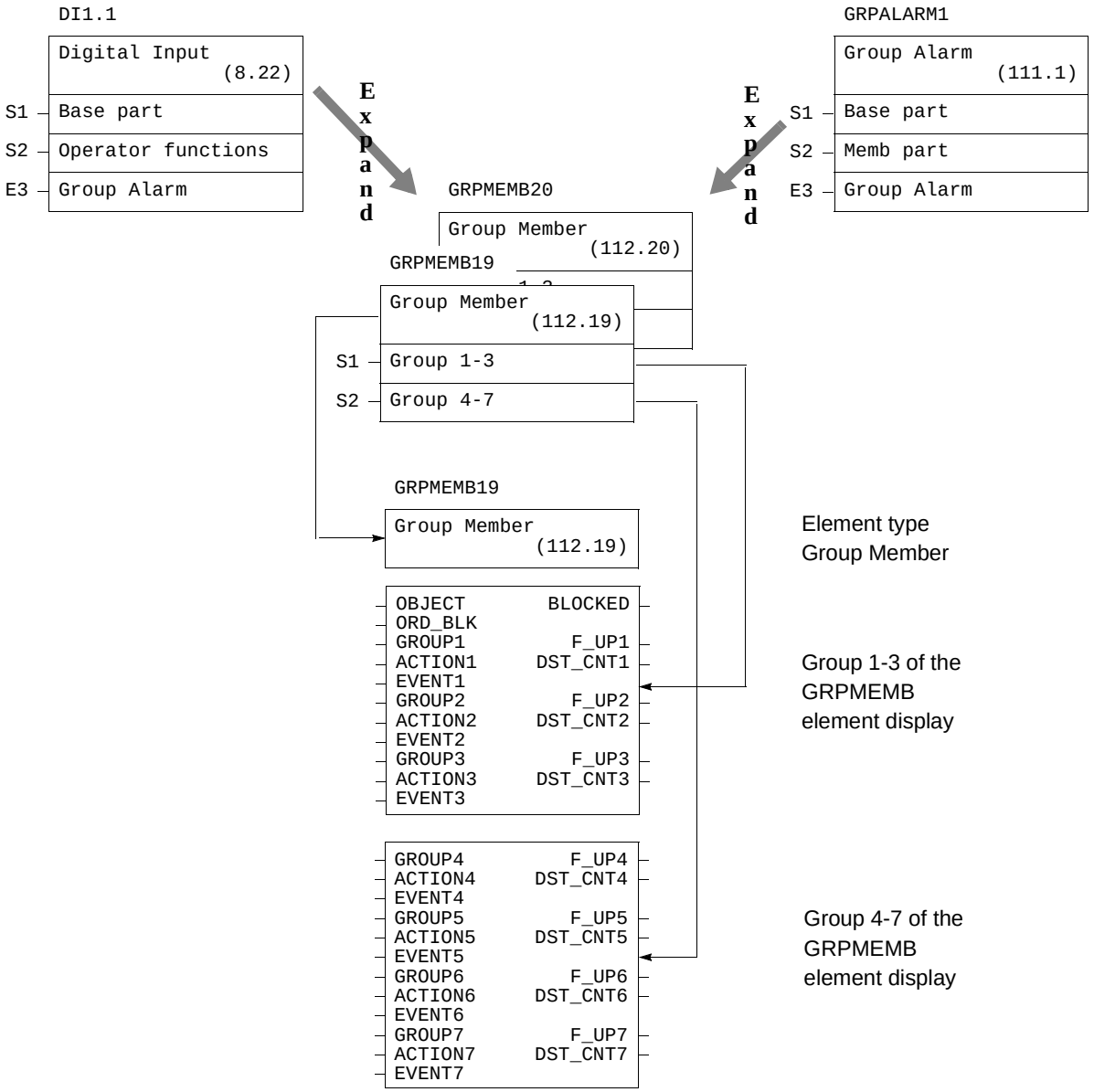


Figure 3-149. Data base element GRPMEMB

Group 1-3

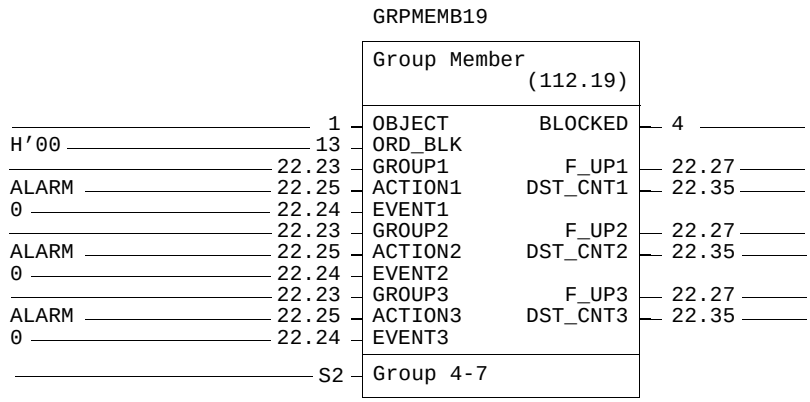


Figure 3-150. Data base element GRPMEMB - Group 1-3

Table 3-12. Data base element GRPMEMB - Group 1-3 Properties

Terminal No	Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks		
1	OBJECT	system	–	–	Name of the process signal/**OBJECT**.	–		
13	ORD_BLK	user	H'00	–	**BL**oc**K**ing of manual **ORD**ers. All available orders are represented by a flag in ORD_BLK. A set flag indicates a blocked order. The default value contains no set flag. The ORD_BLK table shows how to compute the ORD_BLK value. New value can be entered as a hexadecimal string, e.g., H'03 or as a binary string,e.g., B00000011.	Manual Order	Bit value	Def. Hex. value
						Action	1	0
						Event	2	
22.23	GROUPx	user/ dialog	–	–	Name of the alarm **GROUP**, which the process signal/object is connected to.	x=1..7, i.e. a process signal/ object may be connected to seven alarm groups.		
22.25	ACTIONx	user/ dialog	ALARM	–	Specifies the treatment of the Alarm Group when the events specified by terminal REASON in the element GRPALARM occurs (x=1..7).	The following alternatives are available: ALARM: The flag DISTURBance in GRPALARM is affected. BLOCK: Defines a blocking master in the Alarm Group. ACK: defines an acknowledge master in the Alarm Group.		

Table 3-12. Data base element GRPMEMB - Group 1-3 Properties (Continued)

Termi-nal No	Terminal Name	Value entered by	Default value	PC con-nection data type	Description	Remarks
						NO ACTION: Used, e.g., for members which are members only for the purpose of utilizing the blocking or the acknowledge master function.
22.24	EVENTx	user/ dialog	0	–	Specifies the events to be processed by the Alarm Group. Event=0 means all events with an EVENT TREAT pointer equalling the value entered.	–
4	BLOCKED	system	–	–	**F**lag indicating whether the event handling of the members is **BLOCKED** either by Alarm block or Alarm period block.	–
22.27	F_UPx	system	–	–	**F**irst_**UP**. Flag indicating the member that has activated the auto blocking.	–
22.35	DST_CNTx	system	–	–	**DiST**urbance **C**ou**NT**er. Counter forthe number of alarms or unacknow-ledged alarms for the member.	–

Group 4-7

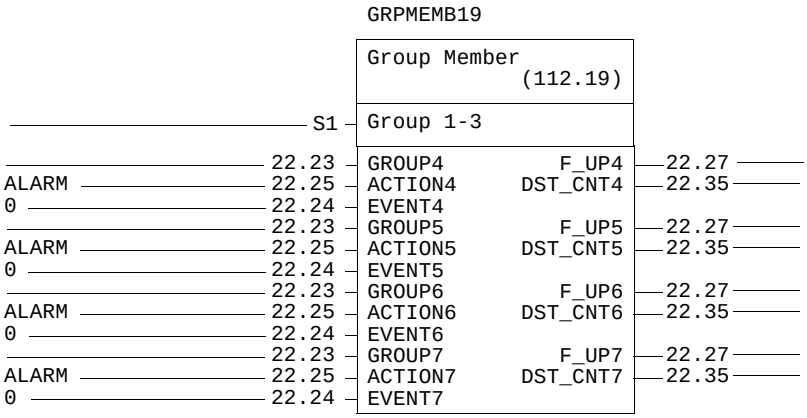


Figure 3-151. Data base element GRPMEMB - Group 4-7

Table 3-13. Data base element GRPMEMB - Group 4-7 Properties

Terminal No	Terminal Name	Value entered by	Default value	PC connection data type	Description	Remarks
22.23	GROUPx	user/ dialog	–	–	Name of the alarm **GROUP**, which the process signal/object is connected to.	x=1..7, i.e. a process signal/ object may be connected to seven alarm groups.
22.25	ACTIONx	user/ dialog	ALARM	–	Specifies the treatment of the Alarm Group when the events specified by terminal REASON in the element GRPALARM occurs.	The following alternatives are available: ALARM: The flag DISTURBance in GRPALARM is affected. BLOCK: Defines a blocking master in the Alarm Group. ACK: defines an acknowledge master in the Alarm Group. NO ACTION: Used, e.g., for members which are members only for the purpose of utilizing the blocking or the acknowledge master function.
22.24	EVENTx	user/ dialog	0	–	Specifies the events to be processed by the Alarm Group. Event=0 means all events with an EVENT TREAT pointer equalling the value entered.	–
22.27	F_UPx	system	–	–	**F**irst_**UP**. Flag indicating the member that has activated the auto blocking.	–
22.35	DST_CNTx	system	–	–	**D**i**ST**urbance **C**ou**NT**er. Counter for the number of alarms or unacknowledged alarms for the member.	–

3.3.15.7 Documentation

For documentation of Alarm Group configuration, the command **LGAM** (**L**ist **G**roup **A**larm **M**embers) is available in Advant Station 100 Series Engineering Stations and in the AdvaBuild On-line Builder. The syntax for this command is:

- **LGAM SEL=**<select range> **/EXP**

The qualifier SEL specifies the Alarm Group(s) to be documented, and the qualifier /EXP specifies that information about the Group Members shall be listed. Utilizing this command, you can produce:

- A list containing all Alarm Groups in a node (select range = **ALL**).
- A list containing one specified Alarm Group (select range = name of the Alarm Group).
- A list containing a specified range of Alarm Groups (select range = name of the first Alarm Group to list > number of members to list, for example SEL=GRPALARM1>3).

If you omit the qualifier /EXP, only parameters related to the Alarm Group are listed, that is the members are not listed.

The layout of the list is shown in the figure below. This list corresponds to the command:

- **LGAM SEL=GRPALARM1 /EXP**.

```
    NAME :     GA_N17_001            DESCRIPTION:     Fire Alarm Group

DO ALARM:      DO_N17_001            IMPLEMENTED:     TRUE     SECTION:   2
DO UNACK:      DO_N17_002            GRP_MEMB:        FALSE    CLASS:     3
                                     REASON:          UNACK    NETWORK:   11
                                     DIST_TREAT:      2        NODE:      1

No.  NAME                ACTION     EVENT  NODE    LF    LR

001. DETECTOR_1          ALARM      0      11      8     1
002. DETECTOR_2          BLOCK      0      11      8     2
003. DETECTOR_3          ALARM      0      11      6     1
004. DETECTOR_4          ALARM      0      11      6     2
005. DETECTOR_5          ALARM      0      11      6     3
```

Figure 3-152. Printout of alarm group information using the LGAM command

More information about the LGAM command can be achieved with the command:

- **HELP LGAM**

3.3.15.8 Tutorial

Example 1: Configuration of an Alarm Group by Means of a Data Base Element

We have four digital inputs with the unique names Alarm_Detector_1 through Alarm_Detector_4. These signals are to form an Alarm Group together with a superior Group Alarm Object, and the group is to be called Alarm_Group_1. The External Status Indication function is to be used by tying the DO signals Dist_signal and Unack_signal to the Alarm Group. The group is to be defined as alarm-triggered and all the members are to be configured to affect the group when they themselves change status.

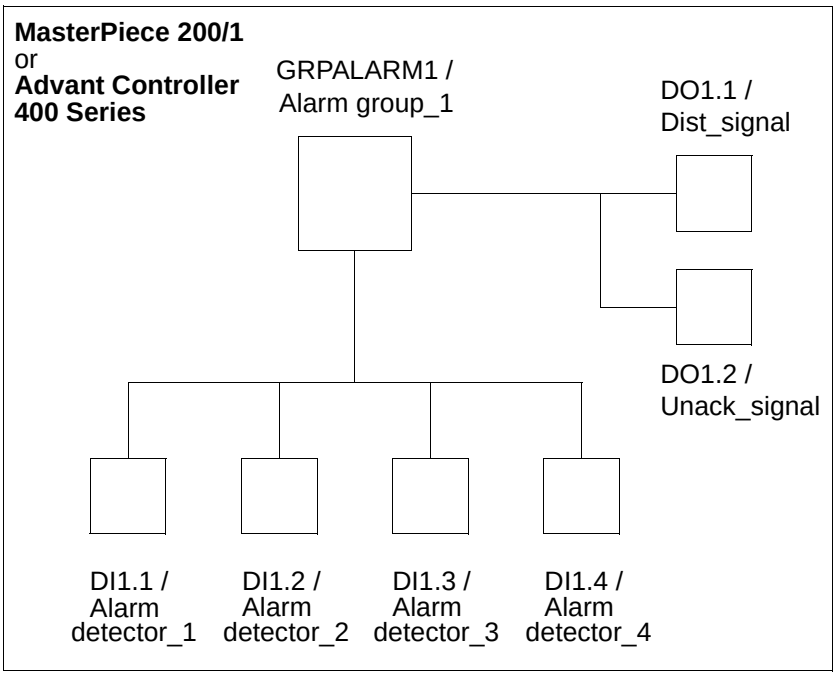


Figure 3-153. Configuration example

1. Dimension the data base in MasterPiece 200/1 or Advant Controller 400 Series for at least:
   - One DI board
   - One DO board
   - 32 DI signals
   - 32 DO signals
   - One Alarm group
   - Four Group Members

#DIMDB

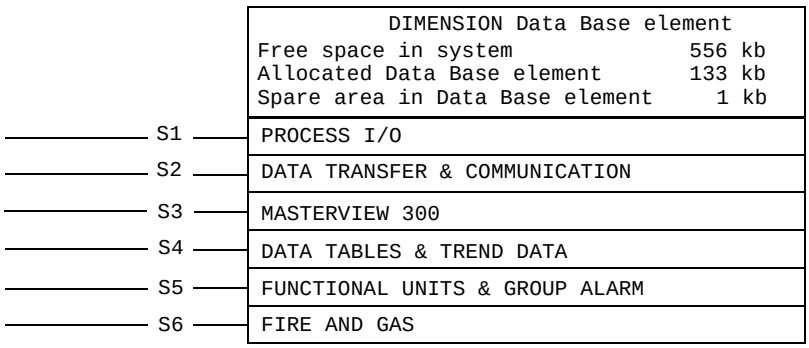


Figure 3-154. DIMDB

Expand segment S1

.? S1

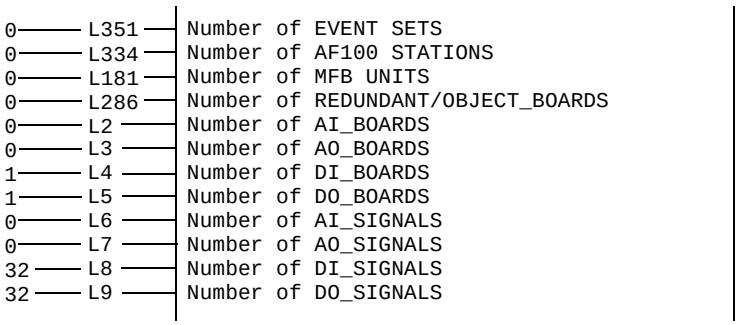

0 L351 Number of EVENT SETS
0 L334 Number of AF100 STATIONS
0 L181 Number of MFB UNITS
0 L286 Number of REDUNDANT/OBJECT_BOARDS
0 L2 Number of AI_BOARDS
0 L3 Number of AO_BOARDS
1 L4 Number of DI_BOARDS
1 L5 Number of DO_BOARDS
0 L6 Number of AI_SIGNALS
0 L7 Number of AO_SIGNALS
32 L8 Number of DI_SIGNALS
32 L9 Number of DO_SIGNALS

Figure 3-155. DIMDB - Expanded segment S1

Expand segment S5

? S5

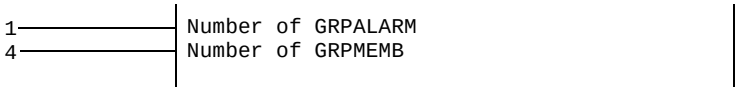


Figure 3-156. DIMDB - Expanded segment S5

2. Create a new GRPALARM data base element. Enter **CRDB GRPALARM**.

   The data base element is shown on the screen:

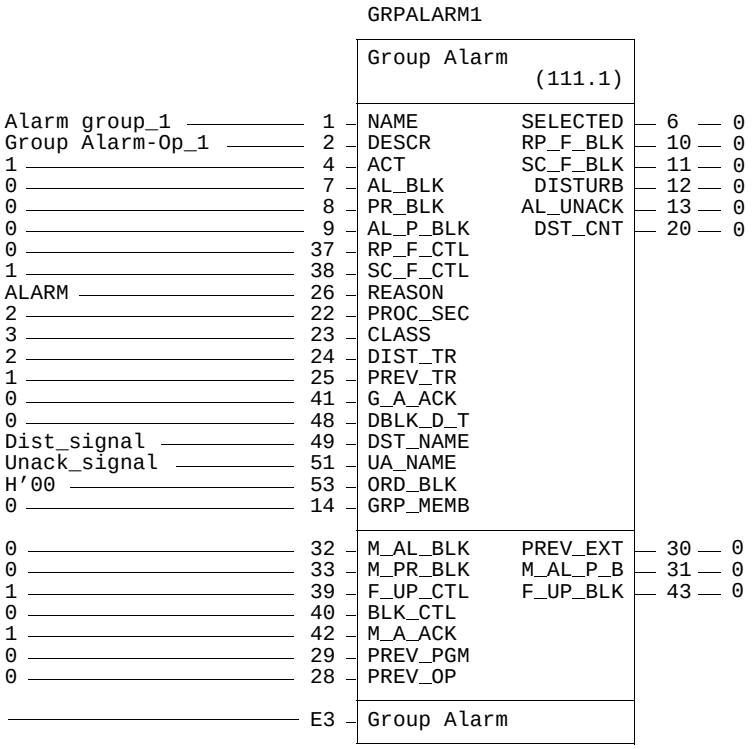


Figure 3-157. Data base element GRPALARM

The following parameters have been changed. Beyond these, the default values defined in the data base still apply:

NAME Max 20 characters.

Note! The name must be unique among all nodes! However, redundant Advant Station 500 Series Operator Stations or MasterView 800/1 nodes are exceptions; in those cases, the name does not have to be unique.

DESCR Description. Max 20 characters.

SC_F_CTL Blocks the processing for Group Alarm Objects of recurring alarms from the Alarm Group.

PROC_SEC The Group Alarm Object is included in process section No. 2.

CLASS The Group Alarm Object is included in class 3.

DIST_TR Pointer to an Event Treat data base element on the RTA board in the operator station. EVENT2 includes both event and alarm processing.

PREV_TR Pointer to an Event Treat data base element on the RTA board in the operator station. EVENT1 includes event processing only.

DBLK_D_T No deblocking delay.

DST_NAME The digital output Dist_signal indicates if the Group Alarm Object is in a state of alarm.

UA_NAME The digital output Unack_signal indicates if there is an unacknowledged alarm for the Group Alarm Object.

F_UP_CTL Only the first alarm of the group is reported to the event processing subsystem.

M_A_ACK The members of the group are auto-acknowledged when the Group Alarm Object is acknowledged.

3. Create and tie the digital inputs to the Group Alarm Object. Filling in the segments S1 and S2 is not discussed here — only the completion of E3 for Group Alarm processing is described.

   Commands:

   MDB DI1.1

   ?E3

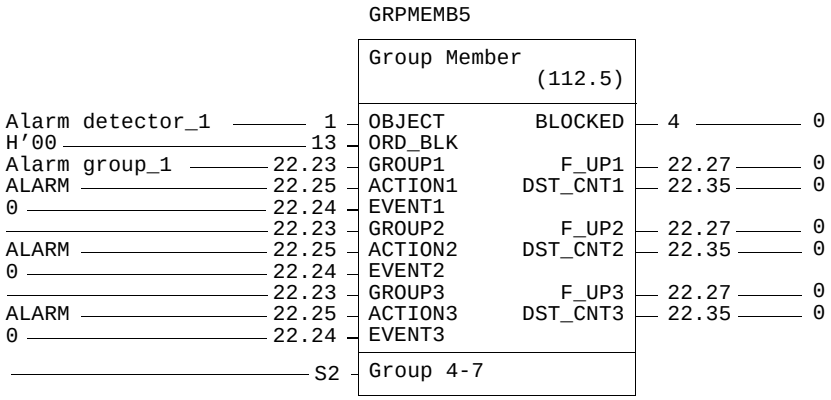


Figure 3-158. Group alarm expansion in the data base element of Alarm_detector_1

The following parameters have been changed. Beyond that, the default values defined for the data base element are still used:

OBJECT The name of the signal represented by the Group Member. Filled in by the system.

GROUP1 Specifies the Group Alarm Object to which the signal is to be connected.

Repeat the above procedure for Alarm_detector_2, Alarm_detector_3 and Alarm_detector_4.

The configuration entered may now be documented, using the command LGAM (List Group Alarm Members). See Section 3.3.15.7 Documentation.

Example 2: Configuration of an Alarm Group through Configuration Window

In this case, we have three digital inputs, uniquely named Detector_1, Detector_2 and Detector_3. These signals are to form an Alarm Group under the name Al_group_1 as shown in Figure 3-159.

The following applies to the definition of the Alarm Group.

- The four inputs can be distributed across three different MasterPiece 200/1 nodes or Advant Controller 400 Series. The Group Alarm Object is located in the operator station.
- The group is to be defined as an acknowledgment-triggered group.
- All members are alarm sources. Acknowledgment-triggered means that the group is affected when the members change between the unacknowledged and acknowledged state.

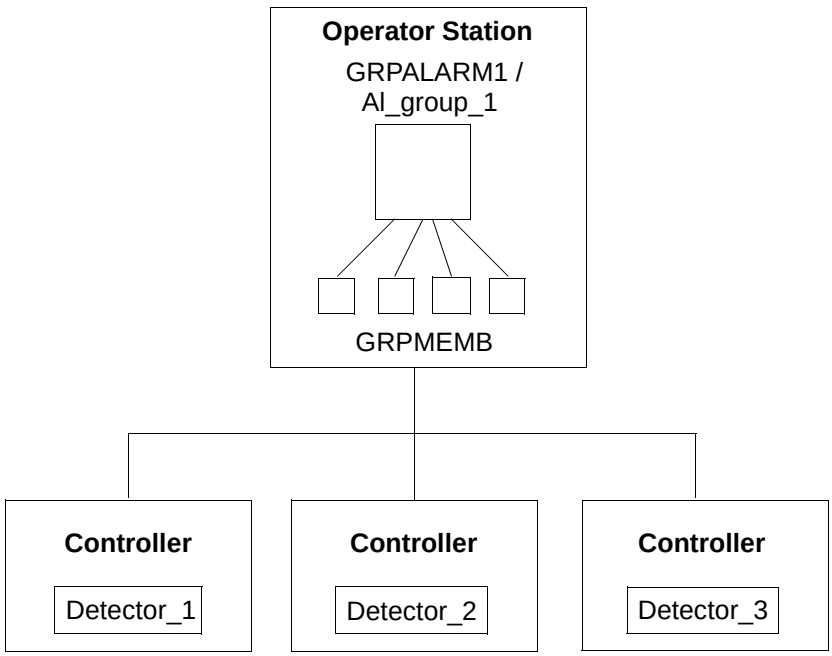


Figure 3-159. Configuration example

In this example, we assume that the data base in each MasterPiece 200/1 node or Advant Controller 400 Series is dimensioned for the required digital inputs. Since the Group Alarm Object is residing in the operator station, no dimensioning for the data base elements GRPALARM or GRPMEMB is required in the MasterPiece 200/1 nodes or Advant Controller 400 Series.

1. Create a new GRPALARM data base element on the RTA board in the operator station. Enter **CRDB GRPALARM**.

   The data base element appears on the screen:

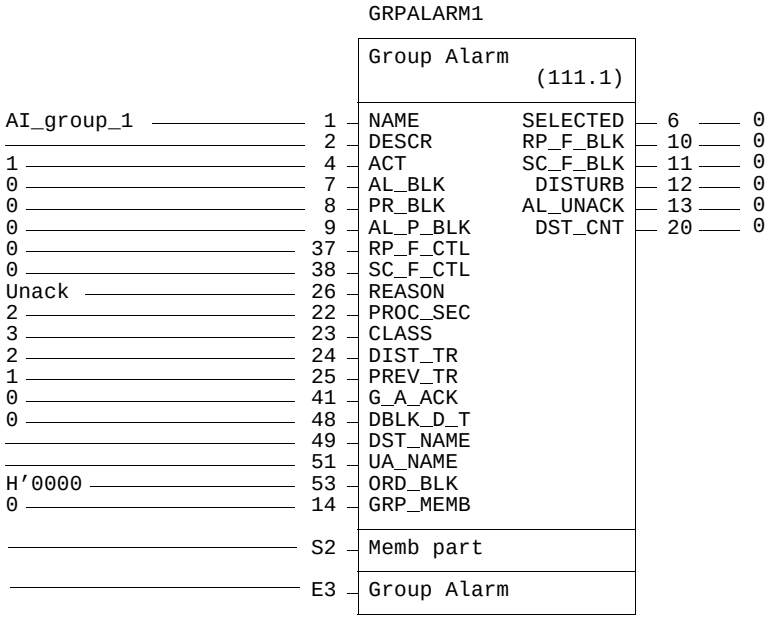


Figure 3-160. Data base element GRPALARM

The following parameters are to be changed before entering into the configuration dialog:

NAME Max. 20 characters.

Note! The name must be unique among all nodes! However, redundant Advant Station 500 Series Operator Stations or MasterView 800/1 nodes are exceptions; in those cases, the name does not have to be unique.

REASON Acknowledgment-triggered Alarm Group, that is this group is specified to react to unacknowledged alarms from the members.

2. Configure the members to be included in the group.

   Bring up the Configuration Window through the system configuration dialog. First press **F1** or click on the screen button D1 (AdvaCommand**...**), which brings up a new set of dynamic keys on the screen, and then press **F4** or click on the screen button D4 (Group Alarm)

   The Group Alarm configuration display appears on the screen.

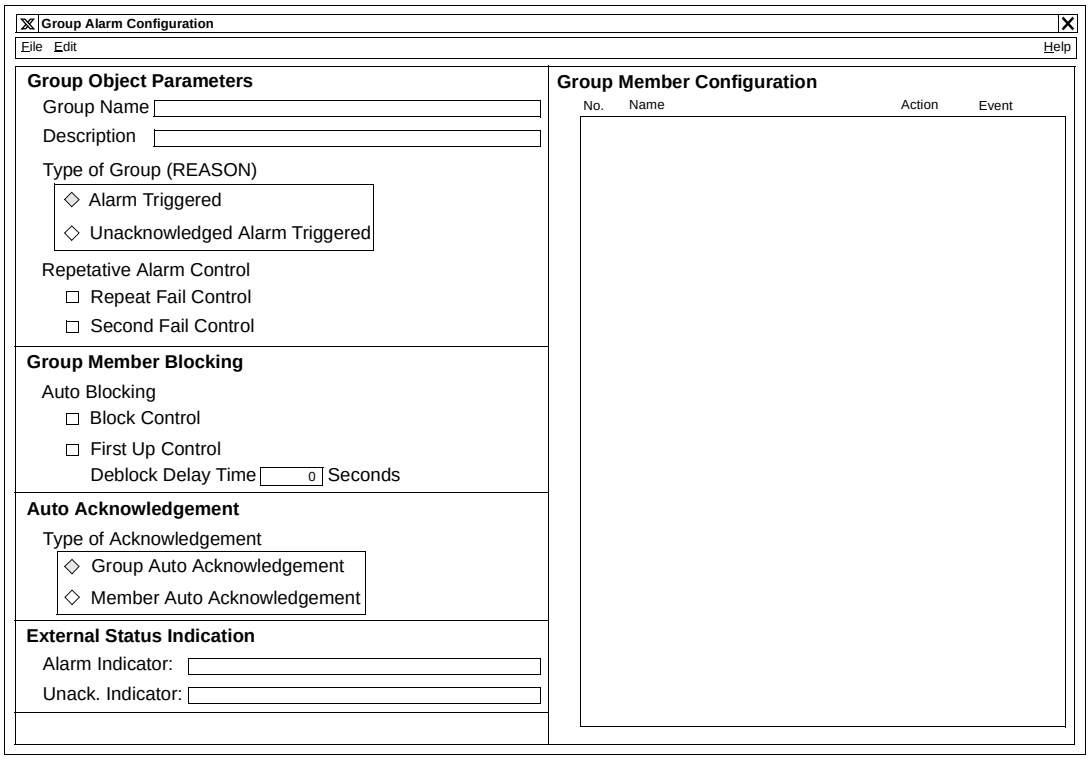


Figure 3-161. Group Alarm Configuration display

Enter the Group Alarm Object name, **Al_group_1**, in the input field labeled Group Name, and press the **Enter** key. The object is now selected and all parameters in the Configuration Window are updated with the corresponding parameters from the selected object.

Bring up the dialog box to add Group Members by selecting **Add Member** from the **Edit** menu in the Menu Bar. A dialog box, as shown below, pops up on the screen.

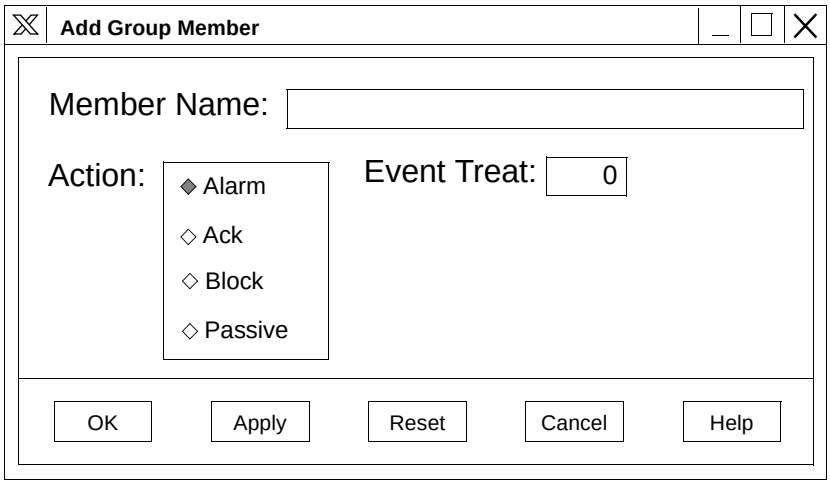


Figure 3-162. Add Group Member dialog box

To add Detector_1 to the Alarm Group, enter the name into the input field 'Name'. Set the Action to Ack by clicking the corresponding button, and the Event property to 22 by entering the number into the input field 'Event'. Press the button labeled **Apply** to activate the member addition.

The object Detector_1 is now added to the group and is displayed as member number 1 in the Group Member Configuration area. The dialog box remains on the screen.

To add Detector_2 to the Alarm Group, change the name in the input field 'Name'. Press the button labeled **OK** to activate the member addition.

The object Detector_2 is now added to the group and is displayed as member number 2 in the Group Member Configuration area. Action and Event are as they were for Detector_1 (see above). The dialog box disappears from the screen.

3.3.15.9 Application Example

In the application examples that follow, the desired function is presented first, followed by an explanation of how the data base elements of the Group Alarm Object and the members should be filled in.

Summated Alarm

In this example, we want to reduce the number of alarms on the Alarm List by grouping interrelated process signals together logically, while event signals from the members are allowed passage to the Event List as usual. When an event signal is generated by any of the members, the status of the Group Alarm Object changes and a single alarm is raised. When all the member signals and objects return to normal, the Group Alarm Object also returns to normal.

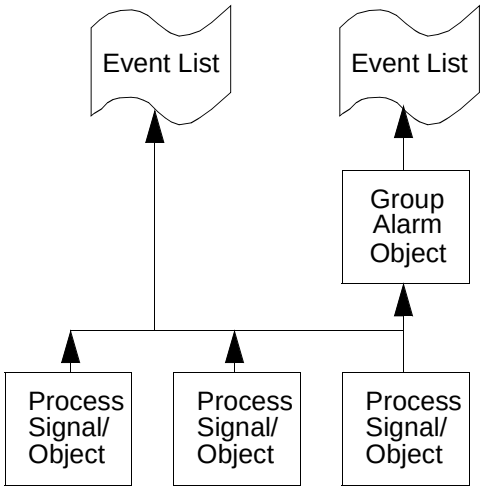


Figure 3-163. Structure of an alarm group for summated alarms

When a Group Alarm Object is defined for the function described above, the data base element is filled in as follows:

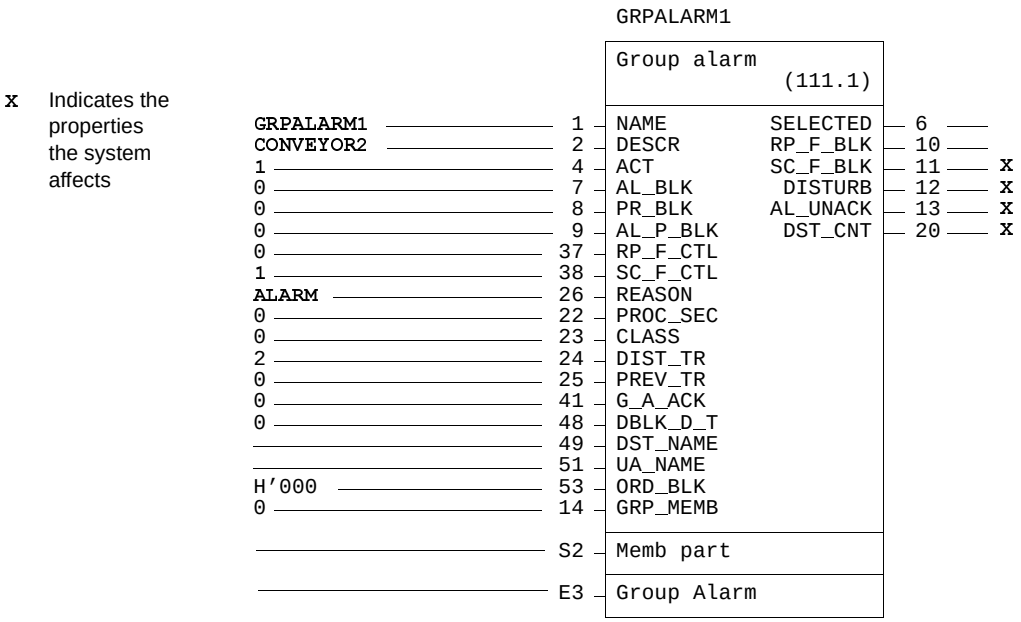


Figure 3-164. Data Base Element for Group Alarm Object

NAME Every Group Alarm Object must be given a unique name.

DESCR Arbitrary description of the group, for example used on displays.

ACT Flag indicating whether the Alarm Group is active or not. ACTive = 1 means that the group is active.

SC_F_CTL Flag indicating whether the processing of incoming events and alarms by the Group Alarm Object is to be disabled after arrival of the first alarm. SC_F_CTL = 1 then means that a Group Alarm message is only raised when the first alarm from any of the members arrives.

REASON Setting this input to 'ALARM' means that the Alarm Group is affected by events and alarms from the members.

DIST_TR Pointers are directed at EVENT2 in the Event Treat file when you set this input to '2'. This in turn means the Group Alarm Object is subject to alarm, as opposed to pure event, processing. The standard event and alarm texts obtained are described in Appendix A Event Texts.

The following properties are affected by the system:

SC_F_BLK Flag indicating whether the Group Alarm Object has registered the same alarm repetitively and blocked the forwarding of these repeats.

DISTURB Flag indicating whether any of the members are in a state of alarm.

AL_UNACK Flag indicating if the Group Alarm Object is unacknowledged.

DST_CNT Shows the number of active alarms in the group.

For the member process signals and objects, only event reporting should be allowed passage. This is achieved by accepting the default Event Treat pointer for every member. When a user-defined Event Treat element is used, the properties AL_TOBLK, AL_FRBLK and PERSISTB should be set to 1.

The descriptions of the members are identical for all members of the group.

x Indicates the properties the system affects

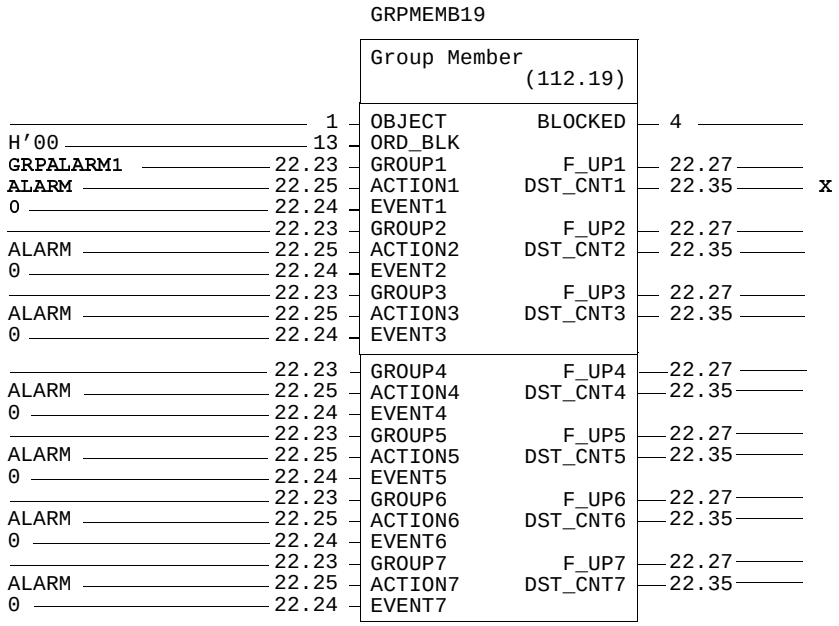


Figure 3-165. Data base element Members

GROUP1 Name of the Group Alarm Object to which the process signal or object is tied.

ACTION1 When ACTION IS set to 'Alarm', an event from the member affects the alarm status of the Group Alarm Object.

EVENT1 When EVENT = 0, all events of the member affect the Group Alarm Object.

The following properties are affected by the system:

DST_CNT1 Shows the number of active alarms of the member.

Blocking Master

In a process section, there may be a number of process signals whose states are particularly important. If a fault develops in any of these, a number of secondary faults are sure to follow. These faults are rather uninteresting because they are so predictable.

To prevent such secondary alarms clogging up the Event and Alarm Lists, you can use blocking master signals. Define the process signals classified as critically important as blocking masters. This means that when any of them generate an alarm signal, alarms and events from the fellow members are blocked, with the exception of the blocking masters themselves.

Deblocking takes place when all the blocking masters are returned to normal. If delayed deblocking is used, deblocking takes place when the delay time runs out.

Non-critical process signals and objects are to be designed so they do not affect the Group Alarm Object.

The Blocking Master function is not to be used when the Alarm Group resides in an operator station.

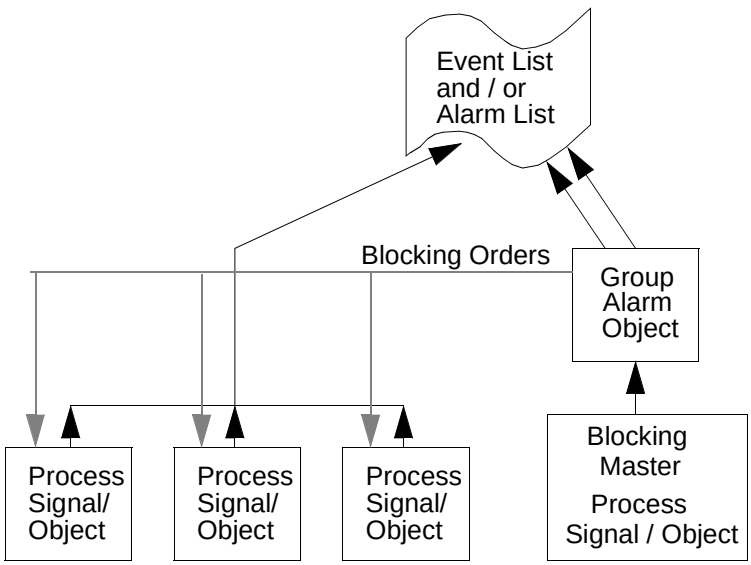


Figure 3-166. Structure of an alarm group for blocking masters

When a Group Alarm Object is to be defined for the function described above, fill in the data base element as follows:

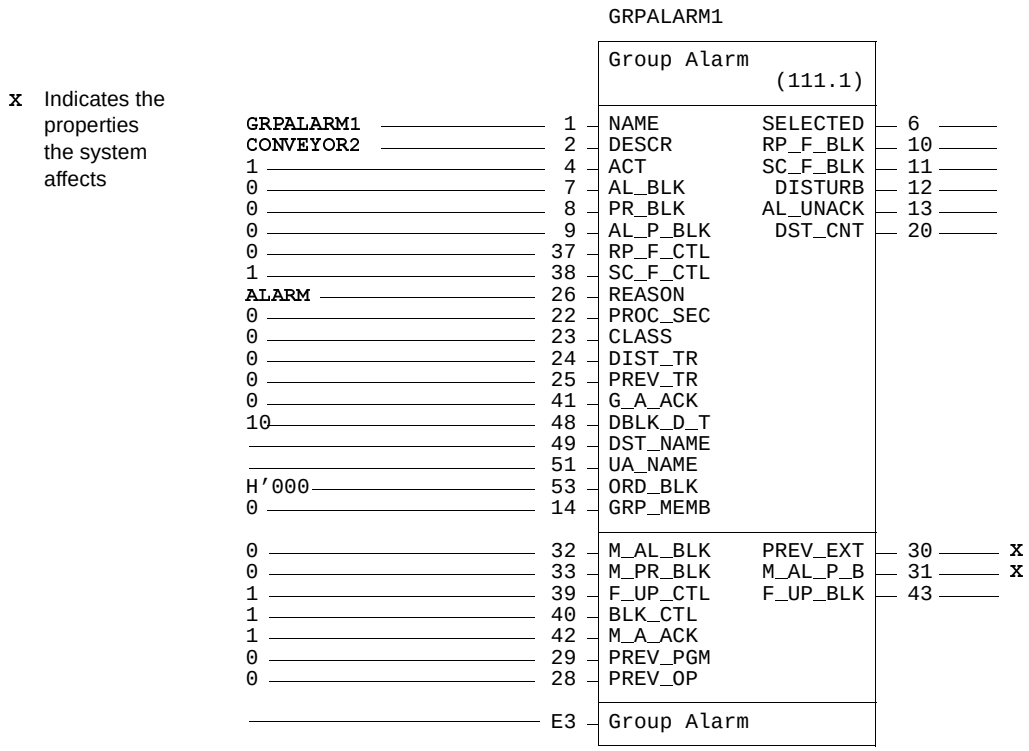


Figure 3-167. Data base element for Group Alarm object

NAME Every Group Alarm Object must be given a unique name.

DESCR Arbitrary description of the group, for example used on displays.

ACT Flag indicating whether or not the Alarm Group is active. ACTive = 1 means that the group is active.

PREV_TR Pointers are directed at EVENT2 in the Event Treat file when you set this input to '2'. This in turn means that only event handling (that is not alarm handling) is specified for the Group Alarm Object. The standard event messages for the Group Alarm Object are specified in Appendix A Event Texts.

DEBLK_D_T Delay time on deblocking.

BLK_CTL Setting this parameter to TRUE means that the event and alarm processing of the members is blocked when a blocking master is activated.

The following properties are affected by the system:

PREV_EXT Flag indicating whether the forwarding of events from the members of the group is blocked by a blocking master.

M_AL_P_B Flag indicating whether the forwarding of alarms and events from the members is blocked.

For the member signals and objects, either event reporting or event and alarm reporting should be specified. This is achieved by accepting the default Event Treat pointer for every member. In addition, the members are configured as follows:

GROUP1 Name of the Group Alarm Object to which the process signal or object is tied.

ACTION1 When ACTION IS set to 'Block', an event from the member activates the group blocking.

EVENT1 When EVENT = 0, all events of the member affect the Group Alarm Object.

See Figure 3-168 below.

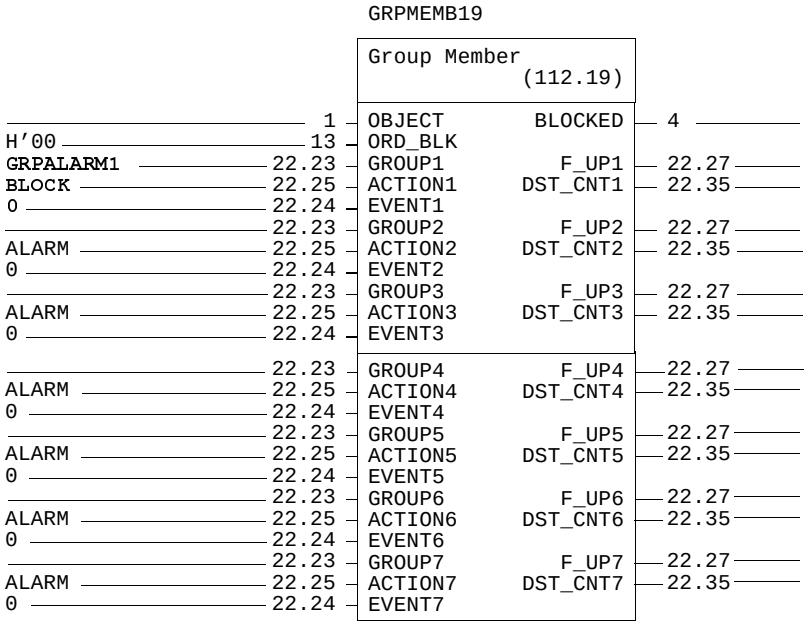


Figure 3-168. Data base element for blocking master

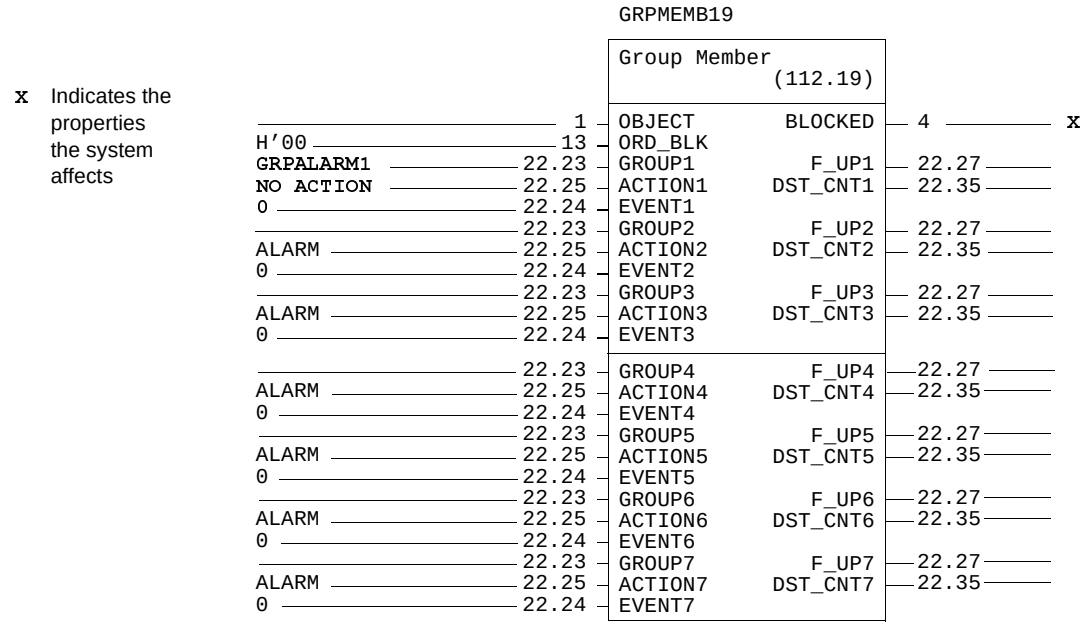


Figure 3-169. Data base element for other members

GROUP1 Name of the Group Alarm Object to which the process signal or object is tied.

ACTION1 Setting this parameter to 'Noaction' means that the Group Alarm Object is not affected by events from this member.

The following properties are affected by the system:

BLOCKED Flag indicating whether the reporting of events and alarms from the member is blocked.

Alarm Group with First Up Alarm Blocking

Contrary to the preceding example, all the member signals and objects here are equally important and likely to give rise to bursts of secondary alarms when they enter a state of alarm. Not all members can be defined as blocking masters since blocking masters cannot be subject to automatic blocking.

The solution to this problem is to let the first alarm from the Group Members activate the automatic blocking. All members, except the one triggering the auto-blocking, are then subject to blocked event and alarm processing. Only the signal activating the auto-blocking is shown on the lists concerned.

Deblocking takes place when the signal causing auto-blocking returns to normal or, if delay on deblocking is used, when the delay time runs out, that is in exactly the same way as it does for blocking masters.

Do not use the First Up alarm blocking function when the Alarm Group resides in an operator station.

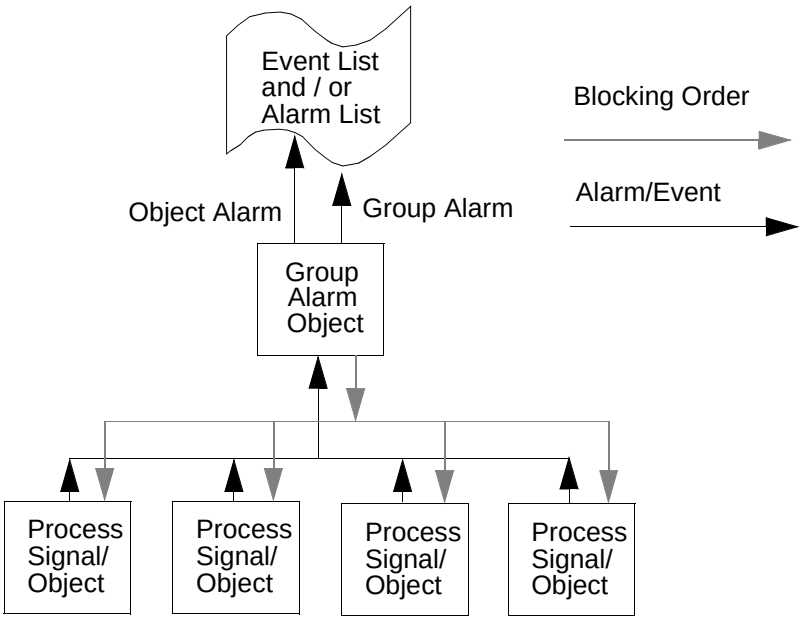


Figure 3-170. Structure of an alarm group with first up alarm blocking

When a Group Alarm Object is to be defined for the function described above, fill in the data base element as follows:

x Indicates the properties the system affects

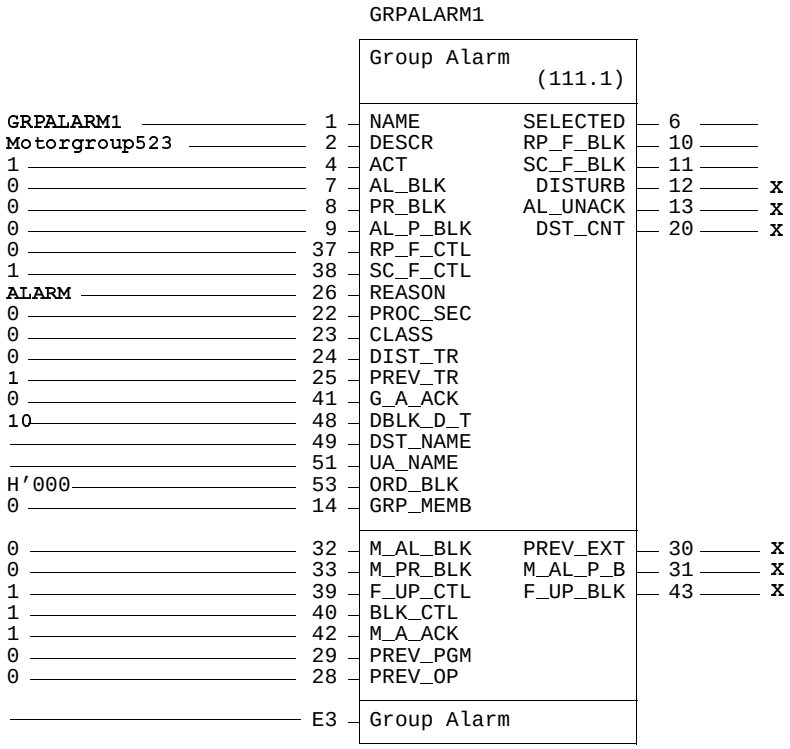


Figure 3-171. Data base element for Group Alarm object

NAME Every Group Alarm Object must be given a unique name.

DESCR Arbitrary description of the group, for example used on displays.

ACT Flag indicating whether or not the Alarm Group is active. ACTive = 1 means that the group is active.

REASON Setting this input to 'Alarm' means that the Alarm Group is affected by events and alarms from the members.

PREV_TR Pointers are directed at EVENT2 in the Event Treat file when you set this input to '2'. This in turn means that only event handling (that is not alarm handling) is specified for the Group Alarm Object.

DBLK_D_T Delay time on deblocking.

BLK_CTL BLK_CTL=1 means that the event and alarm processing of the members is blocked when a blocking master is activated.

F_UP_CTL Flag indicating whether the auto-blocking is invoked due to first-up detection of an alarm.

The following properties are affected by the system:

DISTURB Flag indicating whether any of the members are in a state of alarm.

AL_UNACK Flag indicating if the Group Alarm Object is unacknowledged.

DST_CNT Shows the number of active alarms or events in the group.

PREV_EXT Flag indicating whether the forwarding of events from the members of the group is blocked by a blocking master.

M_AL_P_B Flag indicating whether the forwarding of alarms and events from the members has been blocked.

F_UP_BLK Setting this parameter to TRUE means that only the first alarm or event is reported to the event processing subsystem.

For the member signals and objects, either event reporting or event and alarm reporting should be specified. Achieve this by accepting the default Event Treat pointer for every member.

In addition, configure the members as follows:

x Indicates the properties the system affects

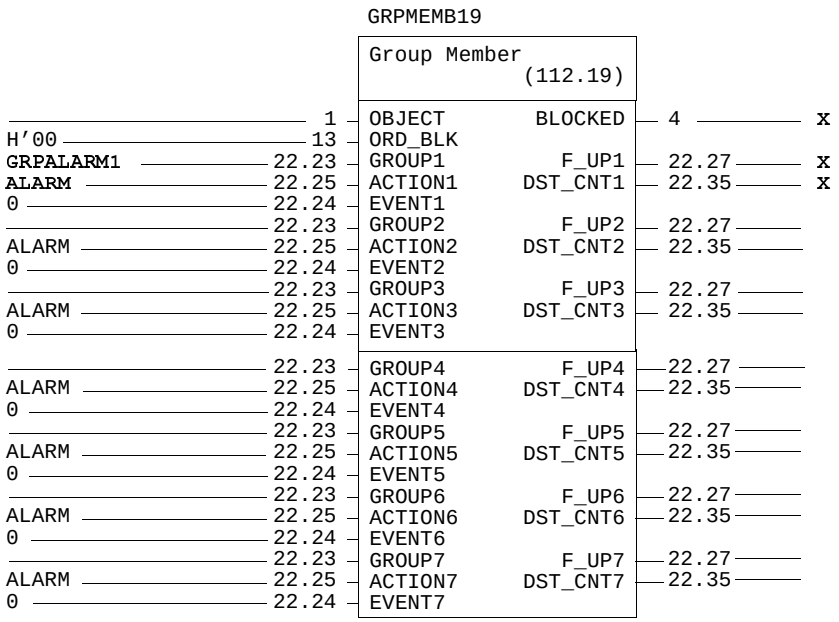


Figure 3-172. Data base element for other members

GROUP1 Name of the Group Alarm Object to which the process signal or object is tied.

ACTION1 When ACTION IS set to 'Alarm', an event from the member affects the alarm status of the Group Alarm Object.

EVENT1 When EVENT = 0, all events of the member affect the Group Alarm Object.

The following properties are affected by the system:

BLOCKED Flag indicating whether the reporting of events and alarms from the member is blocked.

F_UP1 Flag indicating the member that activated the auto-blocking.

DST_CNT1 Shows the number of active alarms of the member.

Acknowledgment Masters

A member signal or object can be defined as acknowledgment master for an Alarm Group. This means that when an event or alarm is raised by that member, the parent Group Alarm Object is auto-acknowledged; also specifying auto-acknowledgment for the members ensures that these are acknowledged when the parent is acknowledged. The members to be auto-acknowledged must be defined as alarm sources, that is the parameter ACTION must be set to ALARM.

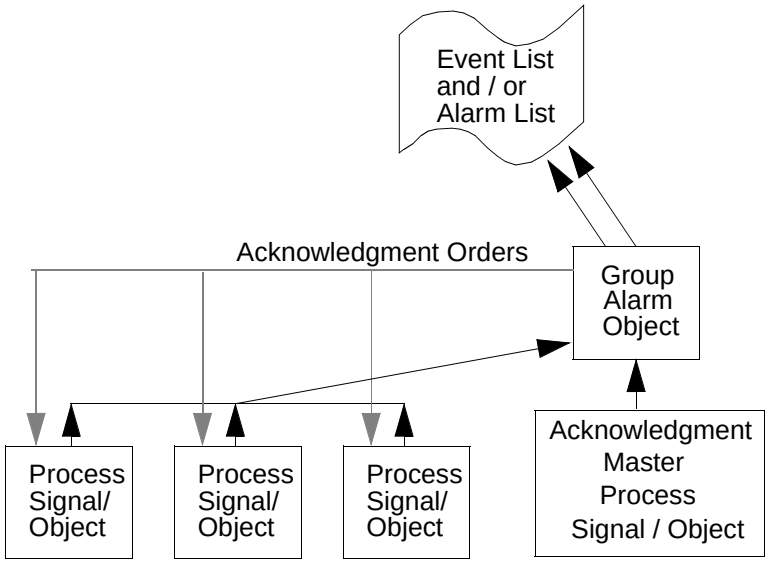


Figure 3-173. Structure of an alarm group with acknowledgment master

When a Group Alarm Object is defined for the function described above, the data base element is filled in as follows:

NAME Every Group Alarm Object must be given a unique name.

DESCR Arbitrary description of the group, for example used on displays.

ACT Flag indicating whether or not the Alarm Group is active. ACTive = 1 means that the group is active.

REASON Setting this input to 'Alarm' means that the Alarm Group is affected by events and alarms from the members.

SC_F_CTL Flag indicating whether the processing of incoming events and alarms by the Group Alarm Object is to be disabled after arrival of the first alarm. SC_F_CTL = 1 then means that a Group Alarm message is only raised when the first alarm from any of the members arrives.

DIST_TR Pointers are directed at EVENT2 in the Event Treat file when you set this input to '2'. This in turn means that the Group Alarm Object is subject to alarm, as opposed to pure event, processing. The standard event and alarm texts obtained are described in Appendix A Event Texts.

M_A_ACK When this parameter is set to '1', the member objects are auto-acknowledged when the parent Group Alarm Object is acknowledged.

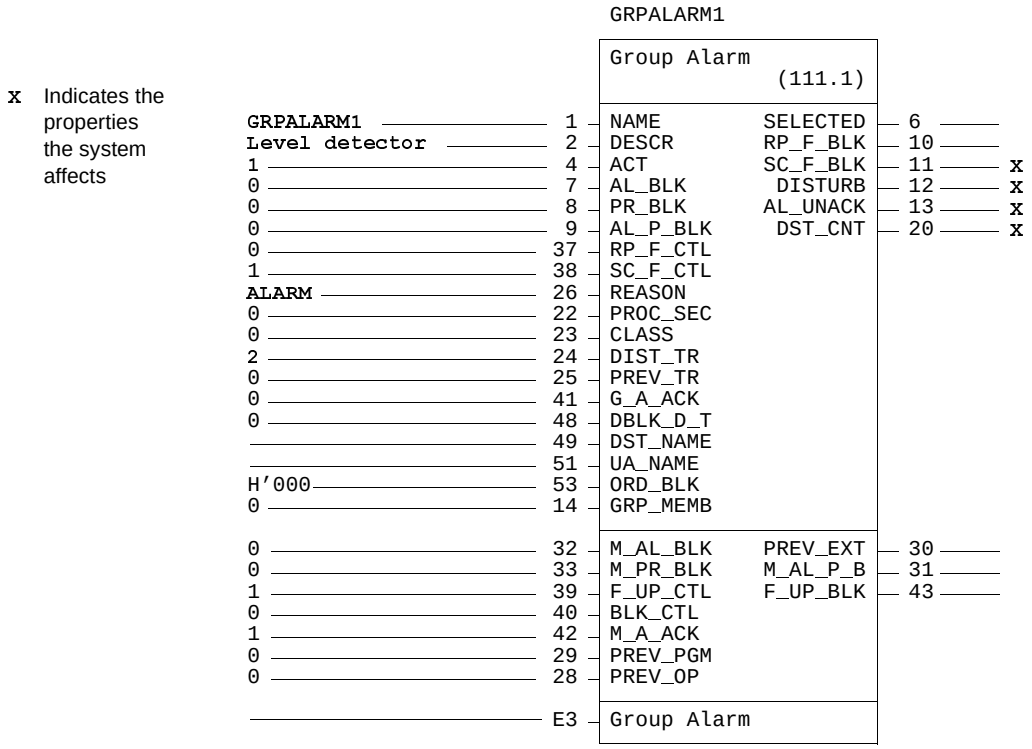


Figure 3-174. Data base element for Group Alarm object

The following properties are affected by the system:

SC_F_BLK Flag indicating whether the Group Alarm Object has registered the same alarm repetitively and blocked forwarding of these repeats.

DISTURB Flag indicating whether any of the members are in a state of alarm.

AL_UNACK Flag indicating if the Group Alarm Object is unacknowledged.

DST_CNT Shows the number of active alarms in the group.

For the member signals and objects, either event reporting or event and alarm reporting should be specified. This is achieved by accepting the default Event Treat pointer for every member. In addition, configure the members as follows:

x Indicates the properties the system affects

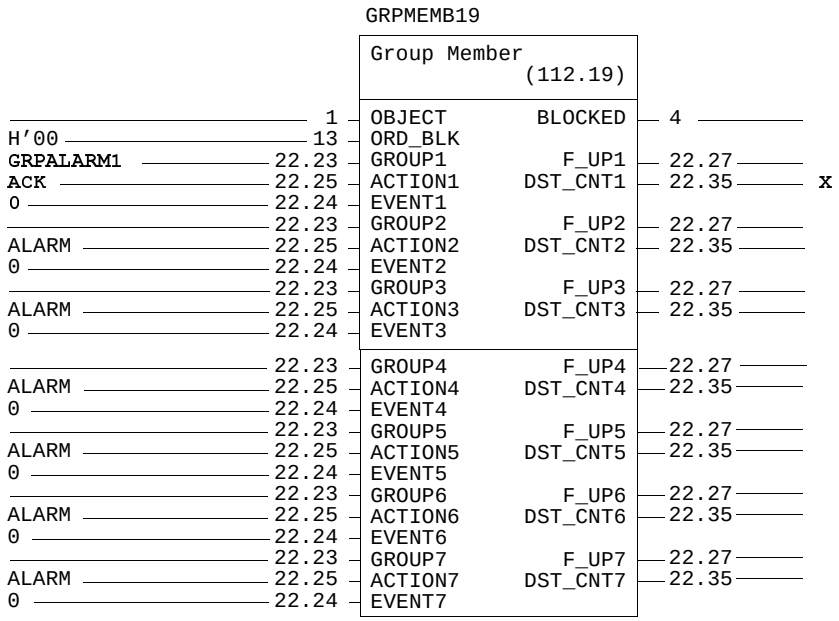


Figure 3-175. Data base element for acknowledgment master

GROUP1 Name of the Group Alarm Object to which the process signal or object is tied.

ACTION1 When ACTION IS set to 'Ack', an event from the member activates the group blocking.

EVENT1 When EVENT = 0, all events of the member affect the Group Alarm Object.

The following properties are affected by the system:

DST_CNT1 Shows the number of active alarms of the member.

x Indicates the properties the system affects

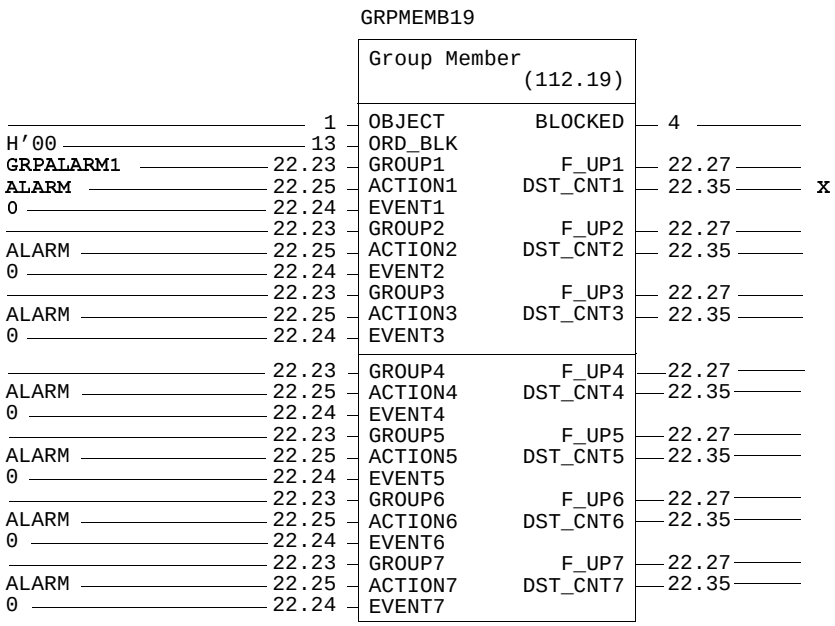


Figure 3-176. Data base element for other members

GROUP1 Name of the Group Alarm Object to which the process signal or object is tied.

ACTION1 When ACTION IS set to 'Alarm', an event from the member affects the alarm status of the Group Alarm Object.

EVENT1 When EVENT = 0, all events of the member affect the Group Alarm Object.

The following properties are affected by the system:

DST_CNT1 Shows the number of active alarms of the member.

Combination of Two Group Alarm Objects

In the following example, two Group Alarm Objects are used to obtain the desired function. One object is alarm-triggered and the other is acknowledgment-triggered. Both groups are connected to alarm panels through the digital outputs associated with the groups.

The alarm-triggered group is used by the process operator and shows the alarm status of the members.

The acknowledgment-triggered group is used by production management to show if there are any unacknowledged alarms.

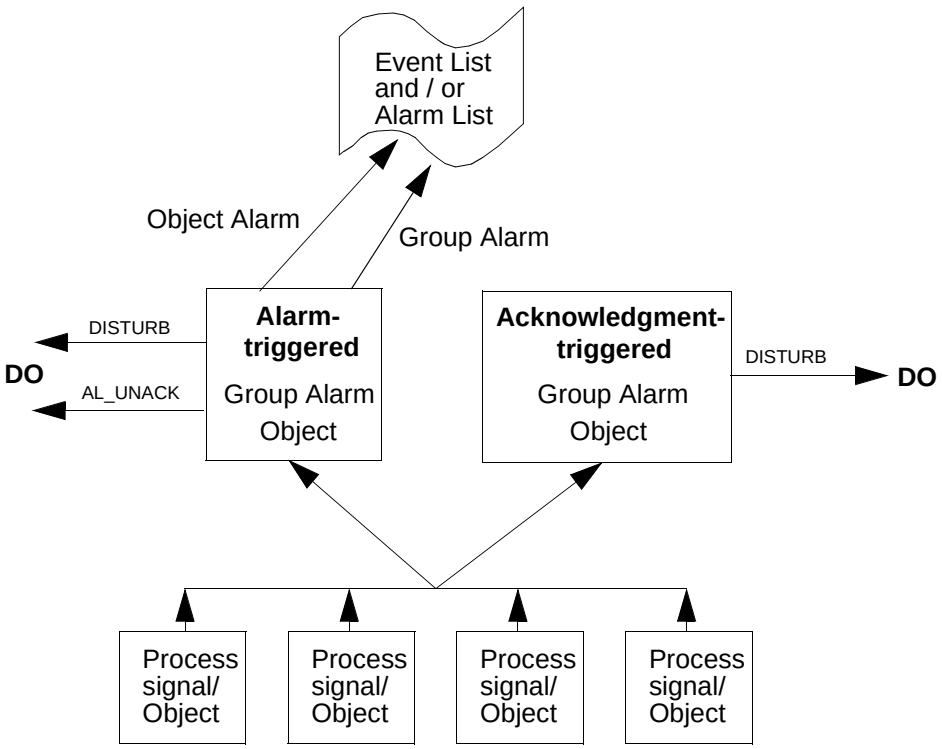


Figure 3-177. Coordination of two group alarm objects

Alarm-triggered Groups

This variant is actually the same as that given in the example of summated alarms. Here, both event and alarm reporting are specified for the members. In addition, the digital outputs associated with the Group Alarm Object are also used. When a member signal or object generates an alarm that affects the parent Group Alarm Object, it is indicated on the alarm panel by the digital outputs.

The one output mirrors the state of the element output DISTURB while the other indicates the state of ALARM_UNACK. By means of a PC program, you can obtain the following function from the alarm panel. When the Alarm Group contains an alarm, a steady light appears, and when it holds an unacknowledged alarm, a flashing light appears.

When all the member signals and objects are returned to normal, the Group Alarm Object also returns to normal.

When a Group Alarm Object is defined for the above function, fill in the data base element as follows:

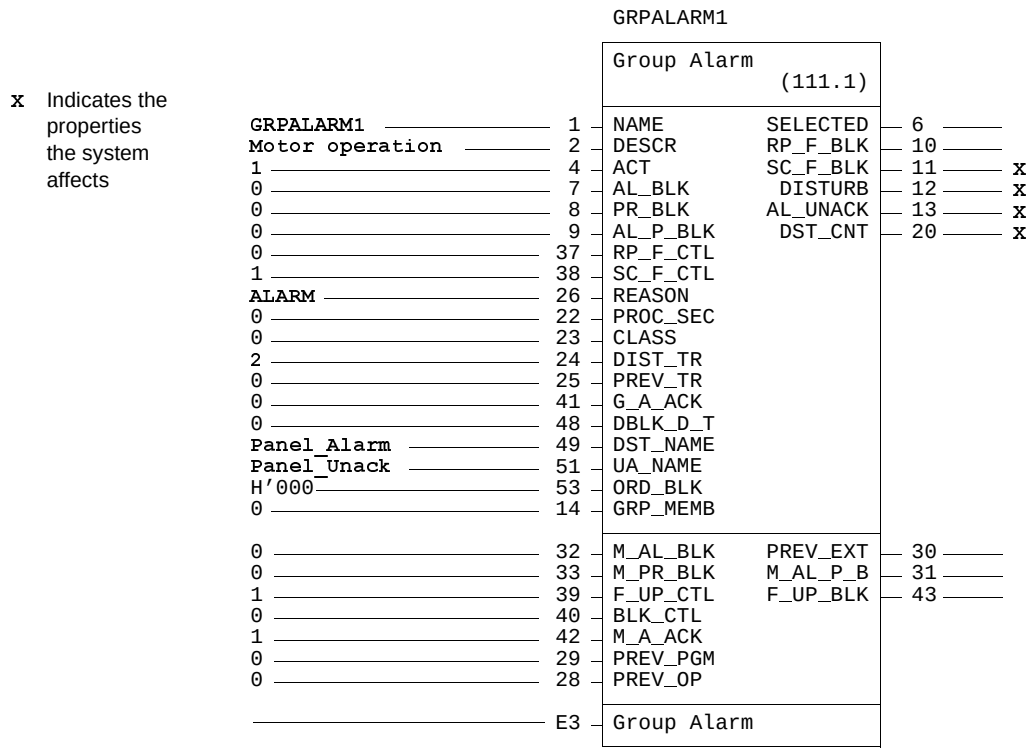

x Indicates the properties the system affects
GRPALARM1
Group Alarm
(111.1)
GRPALARM1 — 1 — NAME
Motor operation — 2 — DESCR
1 — 4 — ACT
0 — 7 — AL_BLK
0 — 8 — PR_BLK
0 — 9 — AL_P_BLK
0 — 37 — RP_F_CTL
1 — 38 — SC_F_CTL
ALARM — 26 — REASON
0 — 22 — PROC_SEC
0 — 23 — CLASS
2 — 24 — DIST_TR
0 — 25 — PREV_TR
0 — 41 — G_A_ACK
0 — 48 — DBLK_D_T
Panel_Alarm — 49 — DST_NAME
Panel_Unack — 51 — UA_NAME
H'000 — 53 — ORD_BLK
0 — 14 — GRP_MEMB
SELECTED — 6
RP_F_BLK — 10
SC_F_BLK — 11 — x
DISTURB — 12 — x
AL_UNACK — 13 — x
DST_CNT — 20 — x
0 — 32 — M_AL_BLK
0 — 33 — M_PR_BLK
1 — 39 — F_UP_CTL
0 — 40 — BLK_CTL
1 — 42 — M_A_ACK
0 — 29 — PREV_PGM
0 — 28 — PREV_OP
PREV_EXT — 30
M_AL_P_B — 31
F_UP_BLK — 43
E3 — Group Alarm

Figure 3-178. Data base element for Group Alarm object

NAME Every Group Alarm Object must be given a unique name.

DESCR Arbitrary description of the group, for example used on displays.

ACT Flag indicating whether or not the Alarm Group is active. ACTive = 1 means that the group is active.

SC_F_CTL Flag indicating whether the processing of incoming events and alarms by t he Group Alarm Object is to be disabled after arrival of the first alarm. SC_F_CTL = 1 then means that a Group Alarm message is raised only when the first alarm from any of the members arrives.

REASON Setting this input to 'ALARM' means the Alarm Group is affected by events and alarms from the members.

DIST_TR Pointers are directed at EVENT2 in the Event Treat file when you set this input to '2'. This in turn means that the Group Alarm Object is subject to alarm, as opposed to pure event, processing. The standard event and alarm texts obtained are described in Appendix A Event Texts.

DST_NAME The name of the digital output that mirrors the status of DISTURB. See below.

UA_NAME The name of the digital output that mirrors the status of DISTURB. See below.

The following properties are affected by the system:

SC_F_BLK Flag indicating whether the Group Alarm Object has registered the same alarm repetitively and blocked forwarding of these repeats.

DISTURB Flag indicating whether any of the members are in a state of alarm.

AL_UNACK Flag indicating if the Group Alarm Object is unacknowledged.

DST_CNT Shows the number of active alarms in the group.

For the member process signals and objects, alarm handling, including event reporting, should be allowed passage. This is achieved by accepting the default Event Treat pointer for every member. The descriptions of the members are identical for all the members of the group.

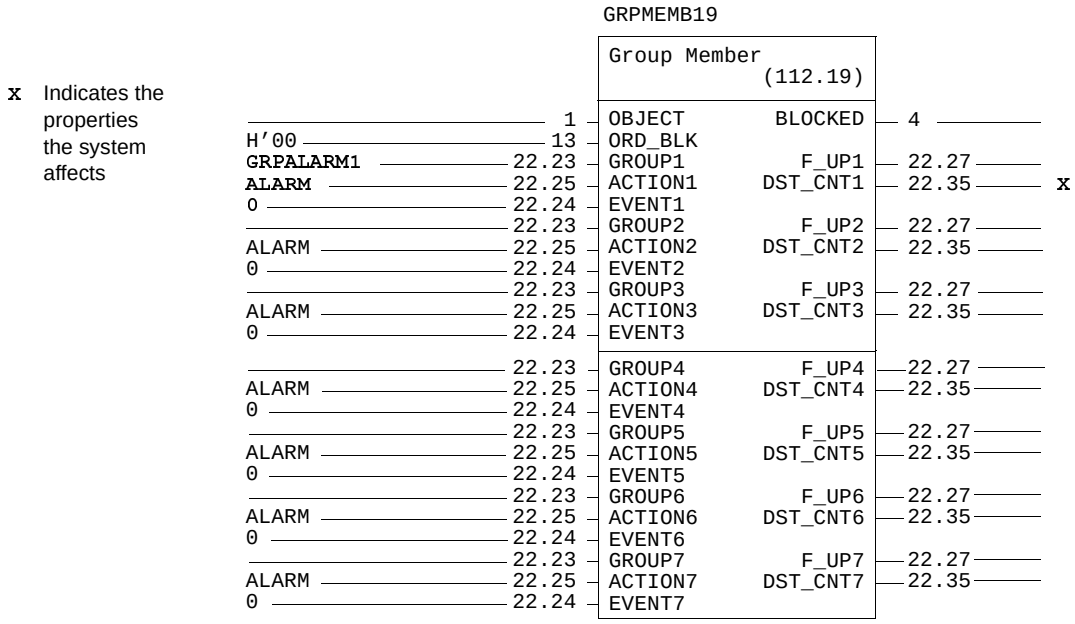


Figure 3-179. Data base element for members

GROUP1 Name of the Group Alarm Object to which the process signal or object is tied.

ACTION1 When ACTION IS set to 'Alarm', an event from the member affects the alarm status of the Group Alarm Object.

EVENT1 When EVENT = 0, all events of the member affect the Group Alarm Object.

The following properties are affected by the system:

DST_CNT1 Shows the number of active alarms of the member.

Acknowledgment-triggered Groups

When a member signal or object indicates the presence of an unacknowledged alarm, the Group Alarm Object is affected and made to forward this indication to the alarm panel through the associated digital outputs. The function of the alarm panel is such that when the Alarm Group contains an unacknowledged alarm, a steady light appears.

In other words, production management receives an indication of whether or not any unacknowledged alarms exist. You do not have to rectify the alarm's cause in order to turn *off* the alarm panel indicators. It is enough for the operator to observe and acknowledge the alarm.

It is not necessary to request any event processing for the Group Alarm Object. Specifying event processing for the alarm-triggered group is adequate.

When a Group Alarm Object is specified for the function described above, fill in the data base element as follows:

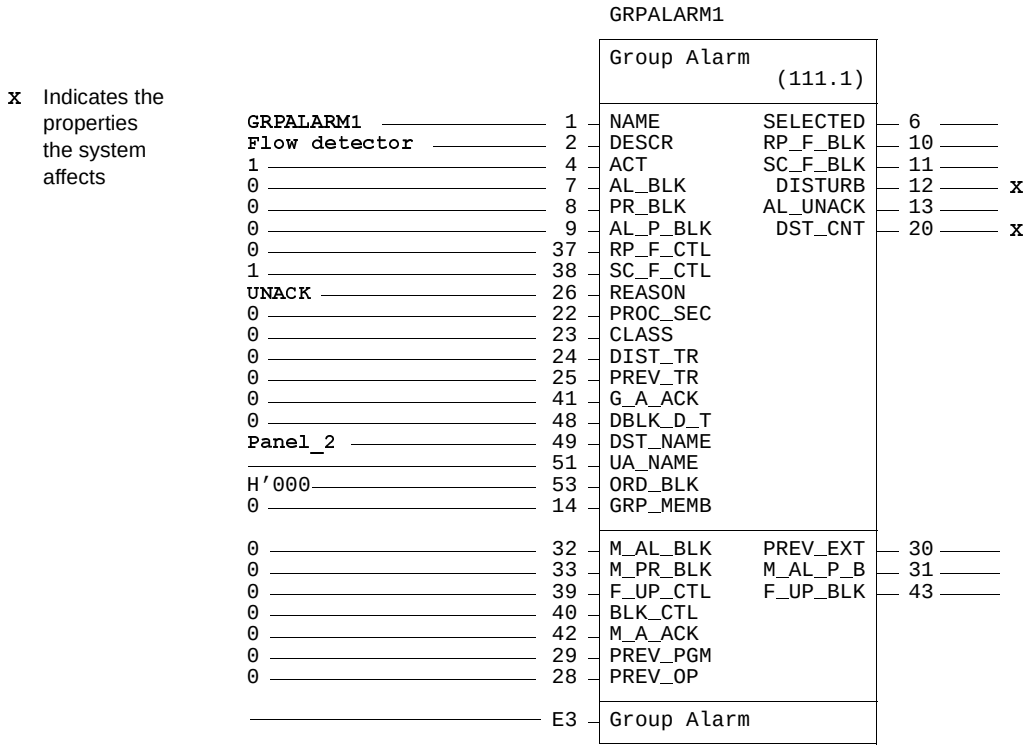


Figure 3-180. Data base element for Group Alarm object

NAME Every Group Alarm Object must be given a unique name.

DESCR Arbitrary description of the group, for example used on displays.

ACT Flag indicating whether or not the Alarm Group is active. ACTive = 1 means that the group is active.

REASON When this parameter is set to 'ALARM', the parent Group Alarm Object is affected when unacknowledged alarms are detected by the members and when these alarms are acknowledged.

DST_NAME The name of the digital output that mirrors the status of DISTURB. See next page.

The following properties are affected by the system:

DISTURB Flag indicating whether any of the members are in a state of alarm.

DST_CNT Shows the number of active alarms in the group.

The descriptions of the members are identical for all members of the groupp.

x Indicates the properties the system affects

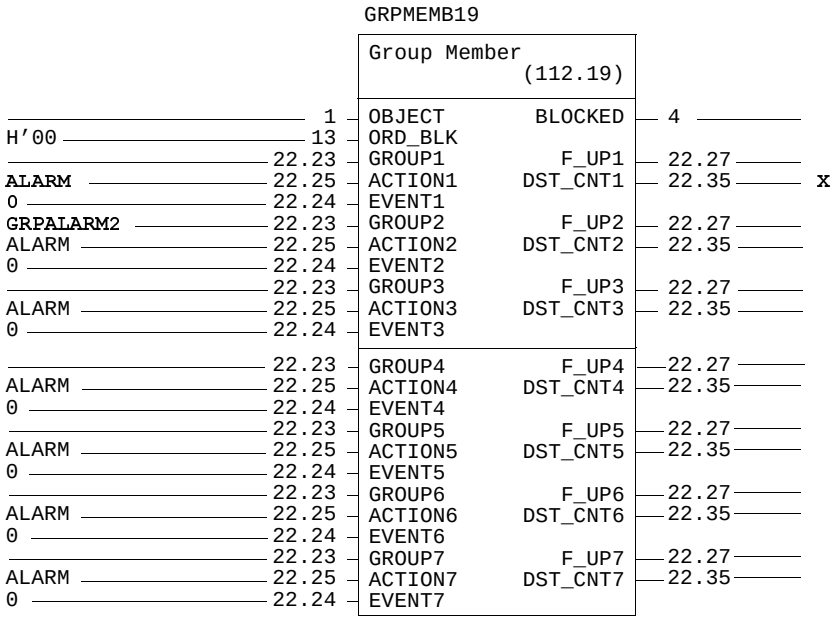


Figure 3-181. Data base element for members

GROUP2 Name of the Group Alarm Object to which the process signal or object is tied.

ACTION2 When ACTION IS set to 'Alarm', an event from the member affects the alarm status of the Group Alarm Object.

EVENT2 When EVENT = 0, all events of the member affect the Group Alarm Object.

The following properties are affected by the system:

DST_CNT1 Shows the number of active alarms of the member.

3.3.16 TTD Configuration

AdvaCommand…D5 TTD Configuration

A log is a set of regularly sampled and stored values for a process signal, process object or a calculated signal. The log specifies which data source it fetches data from and how those data are stored. Common for all logs in the log group is when the sampling and storing are taking place and the storage capacity in space of time. The stored data values contained in the logs can be presented in trend displays configured in the AdvaBuild Display Builder software option or used as data source to the AdvaInform History software option.

You use the TTD Configuration to configure TTD (Time Tagged Data) logs dimensioned in Advant Controller 400 Series and MasterPiece 200/1, but also to make those logs available in the operator station.

To be able to perform a good configuration it is essential that you are familiar with the concepts described below.

A **log** is a collection of time stamped (tagged) data.

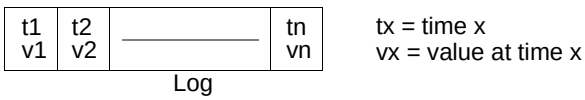


Figure 3-182. A collection of time stamped (tagged) data

The process signal or object from which the data originates is called the data source.

A log also contains information about the data source.

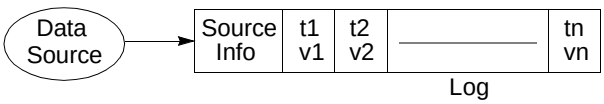


Figure 3-183. Information about the data source

The data source is either a process object or another log.

A log that collects data from a process object is called a **primary log**.

A log that collects data from another log is called a **secondary log**.

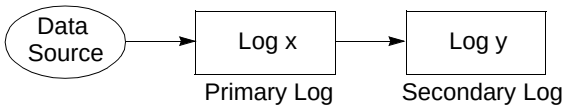


Figure 3-184. Primary and secondary logs

A log is always part of a log group and one log group in TTD can manage up to 127 logs. The logs serial number within the log group is called log index. The log group keeps the important parameters, sample interval, storage interval and log period common to all logs in the log group.

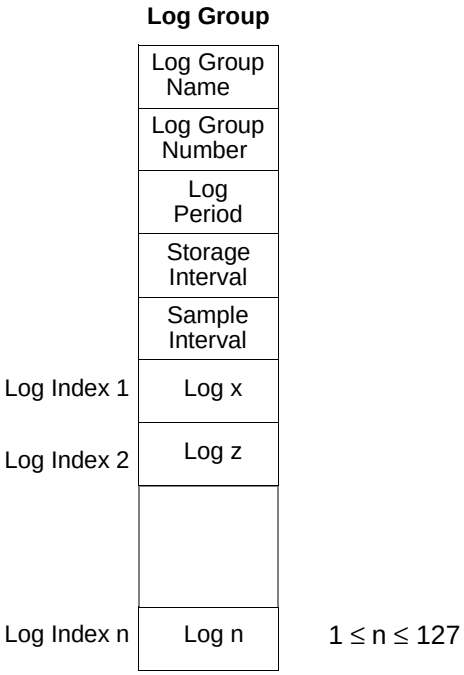


Figure 3-185. Log group

The storage interval defines with which interval a value will be stored.

The sample interval is only visible when dimensioning logs with an engineering tool in the Advant Controller 400 Series or MasterPiece 200/1 and it can not be retrieved.

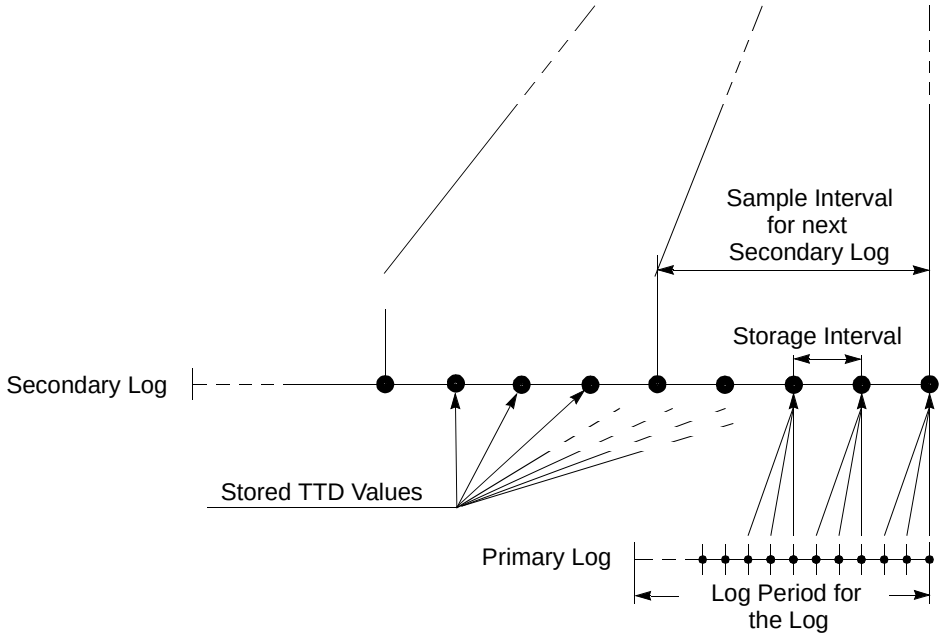


Figure 3-186. Principal of secondary logging

As we can see in Figure 3-186, between one and several sampled values makes up one value to store according to the storage interval. Calculations such as mean, maximum and minimum can be applied. In the simple case however the sample interval equals the storage interval.

The log period defines for how long data is kept by the logs. The logs are circular which means that once they are filled with data the next stored value will overwrite the oldest value. The log period divided with storage interval gives an upper limit of number of values stored in the log.

An Advant Controller 400 Series or MasterPiece 200/1 station node can contain up to 15 log groups and each of the log groups can contain between 1 and 127 logs.

Composite logs allows for common handling of a set of log groups in the TTD Configuration interface, that is chaining logs together for configuration purposes. In trend displays all logs for the specified object are taken into consideration, that is logs other than the configured composite logs can be used in trend displays.

NOTE

Changes done to a log defined in a Composite log will affect all log groups defined in the Composite log. Use only a Composite log typical towards a station it is intended for. Which means that - if you use a Composite log typical configured to work against the logs in specific node or nodes - it will also work against all other nodes but do a lot of damage. Composite log is a powerful configuration tool towards TTD logs but you have to use it with care.

So, special consideration must be taken when using a composite log typical towards a specific node:

- The composite log typical must correspond to the dimensioning of TTD in the specified node. There are mainly two criteria that apply:

  a.The specified log group number must exist

  b.The sample interval in the specified log groups must be ascending.

- When using more than one composite log typical towards a specific node they must not be overlapping in terms of log group numbers.

  That is using a composite log typical, "COMP1" with log group number: 1, 2, 3, 4, and an additional one, "MYCOMP" with log group number: 4, 5, 6, will obviously give an erroneous result. Depending on the order they are applied, log group number 4 will either contain primary logs for log group number 5 and 6 or secondary logs from log number 3.

The logs in the first log group are primary logs while the rest of the logs perform secondary logging.

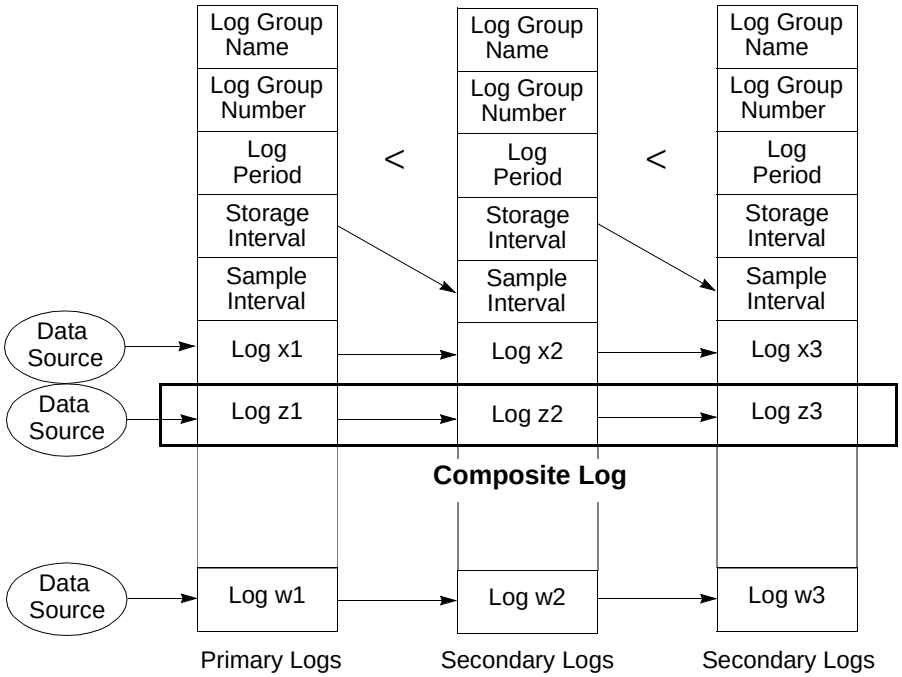


Figure 3-187. Composite log

A composite log can consist of 2 to 15 consecutive log groups, but it is recommended to use 4 consecutive log groups or less.

A composite log typical is a template which, when used against a specific node, makes up a composite log. A composite log typical consists of a name and an array containing 2 to 15 log group numbers

Consideration must be taken to the intended use of composite logs when dimensioning the log groups in the controller nodes.

From a functional point of view, in the TTD Configuration TTD logs can be added, deleted, activated and deactivated.

History logs residing in the Information Management Station can not be configured from the operator station they can only be reached from it.

No logs are stored in the operator station. The logs are stored in Advant Controller 400 Series, MasterPiece 200/1 nodes and Information Management Station.

To enter TTD Configuration, do as follows:

1. Press **F1** or click on the screen button D1 (AdvaCommand...) in the configuration dialog.
2. Press **F5** or click on the screen button D5 (TTD Configuration).

The following display is presented:

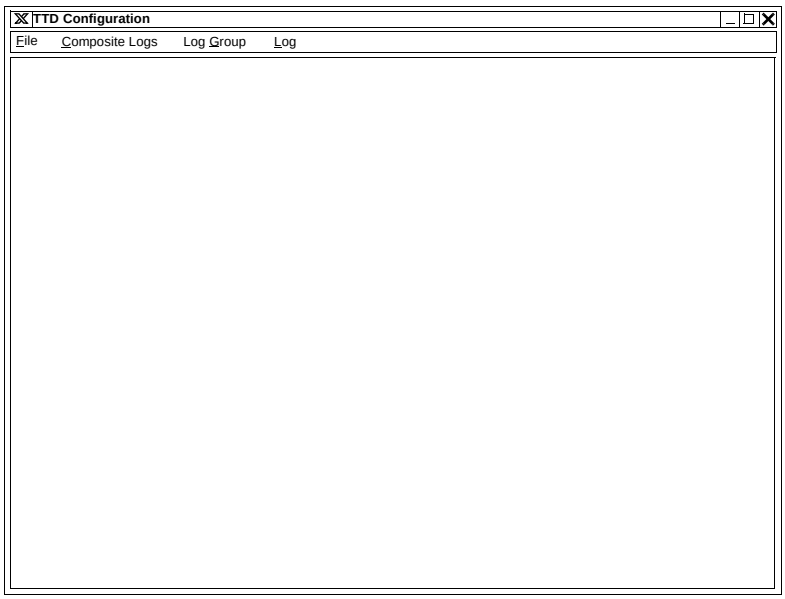


Figure 3-188. Initial window for TTD configuration

The initial display includes the **Menu Bar**.

All actions for composite logs is gathered under the **Composite Log** menu item. The **Log Group** menu item contains operations that are applicable to all logs in the log group while the **Log** menu contains operations that are to be applied towards a single log.

You can work in three different ways with TTD logs, first you can work with one log group at a time or secondly you can work with composite logs which spans more than one log group. The third way is to work against specific logs (single logs) in the log group.

If you choose to work with composite logs the following display is presented with the primary log information shown:

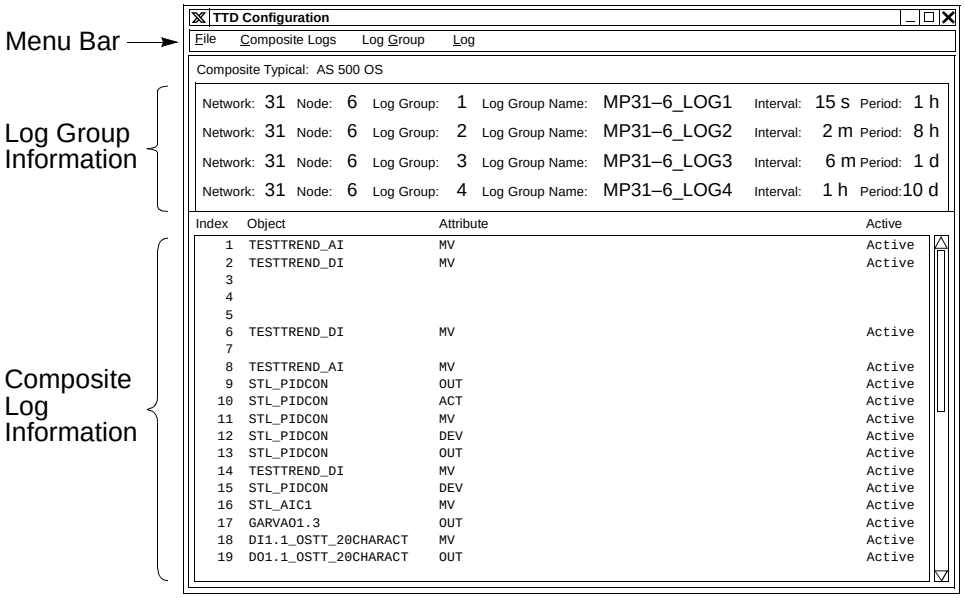

Menu Bar
Log Group Information
Composite Log Information
TTD Configuration
File Composite Logs Log Group Log
Composite Typical: AS 500 OS
Network: 31 Node: 6 Log Group: 1 Log Group Name: MP31–6_LOG1 Interval: 15 s Period: 1 h
Network: 31 Node: 6 Log Group: 2 Log Group Name: MP31–6_LOG2 Interval: 2 m Period: 8 h
Network: 31 Node: 6 Log Group: 3 Log Group Name: MP31–6_LOG3 Interval: 6 m Period: 1 d
Network: 31 Node: 6 Log Group: 4 Log Group Name: MP31–6_LOG4 Interval: 1 h Period: 10 d
Index Object Attribute Active
1 TESTTREND_AI MV Active
2 TESTTREND_DI MV Active
3
4
5
6 TESTTREND_DI MV Active
7
8 TESTTREND_AI MV Active
9 STL_PIDCON OUT Active
10 STL_PIDCON ACT Active
11 STL_PIDCON MV Active
12 STL_PIDCON DEV Active
13 STL_PIDCON OUT Active
14 TESTTREND_DI MV Active
15 STL_PIDCON DEV Active
16 STL_AIC1 MV Active
17 GARVAO1.3 OUT Active
18 DI1.1_OSTT_20CHARACT MV Active
19 DO1.1_OSTT_20CHARACT OUT Active

Figure 3-189. Main window for composite log configuration

If you choose to work with single logs the following display is presented:

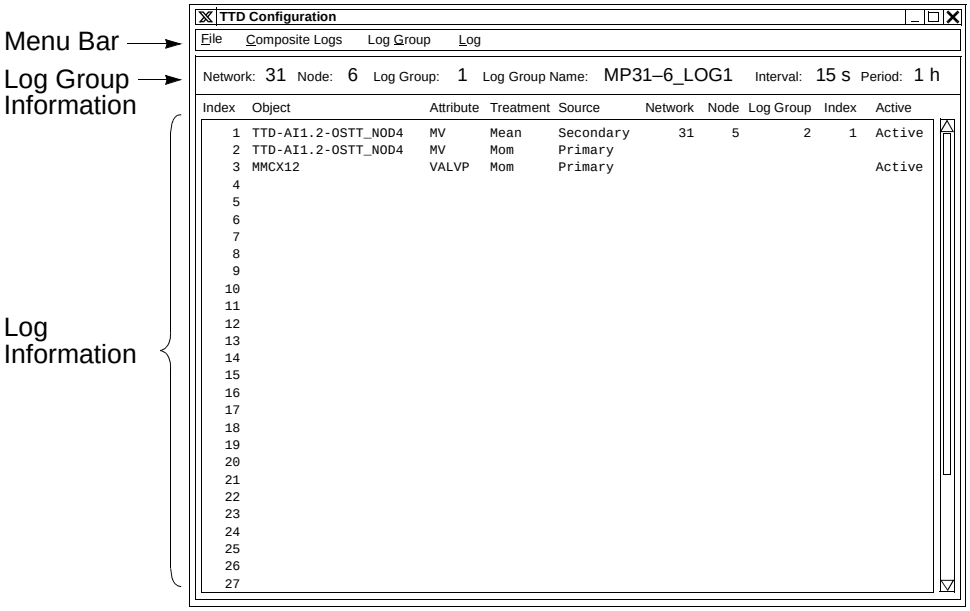

Menu Bar
Log Group Information
Log Information
TTD Configuration
File Composite Logs Log Group Log
Network: 31 Node: 6 Log Group: 1 Log Group Name: MP31–6_LOG1 Interval: 15 s Period: 1 h
Index Object Attribute Treatment Source Network Node Log Group Index Active
1 TTD-AI1.2-OSTT_NOD4 MV Mean Secondary 31 5 2 1 Active
2 TTD-AI1.2-OSTT_NOD4 MV Mom Primary
3 MMCX12 VALVP Mom Primary Active

Figure 3-190. Main window for single log configuration

Both displays are quite similar. Please note the significant differences:

- The Composite Log window has a list of log group information. A change in a composite log affects logs in all log groups in the list. See also NOTE on page 177.
- The Log Information part of the single Log configuration contains more detailed information than the Composite Log Information part of the Composite Log window.
- The operations that can be carried out differ. Operations under the **Composite Log** menu can be carried out while the Composite Log window is active. Operations under **Log Group** and **Log** menu items can be carried out while the single Log window is open.

3.3.16.1 Menu Bar

The Menu Bar is located in the upper portion of the Main Window and consists of pull down menus for activities which enable you to configure logs.

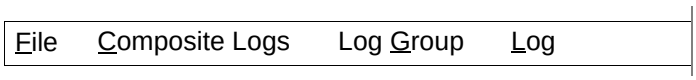


Figure 3-191. Menu bar in the main window

File

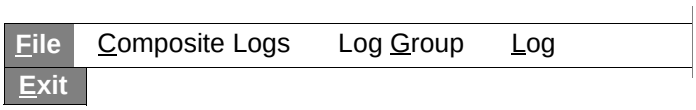


Figure 3-192. File menu for TTD configuration

Exit Terminates the TTD Configuration session.

Composite Logs

The composite log menu contains operations that can be carried out for a predefined set of log groups. It also contains operations to create these definitions, the composite log typicals.

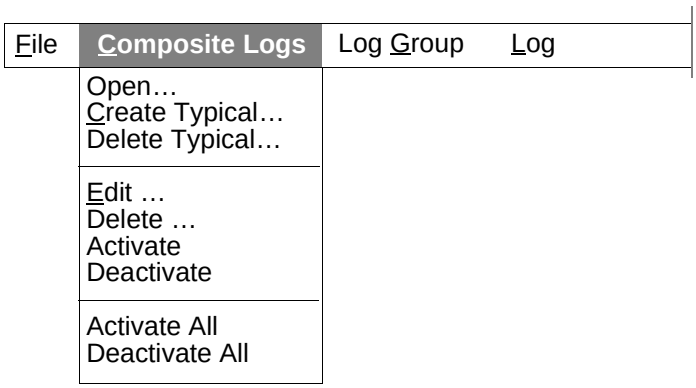


Figure 3-193. Composite Logs menu

Open…

When selected, a dialog box is displayed. In the box, you choose which composite log typical you like to use. You also specify against which node you want to use it.

NOTE

To avoid damage on any log group, the chosen Composite log typical must be valid for the specified node. See also NOTE on page 177.

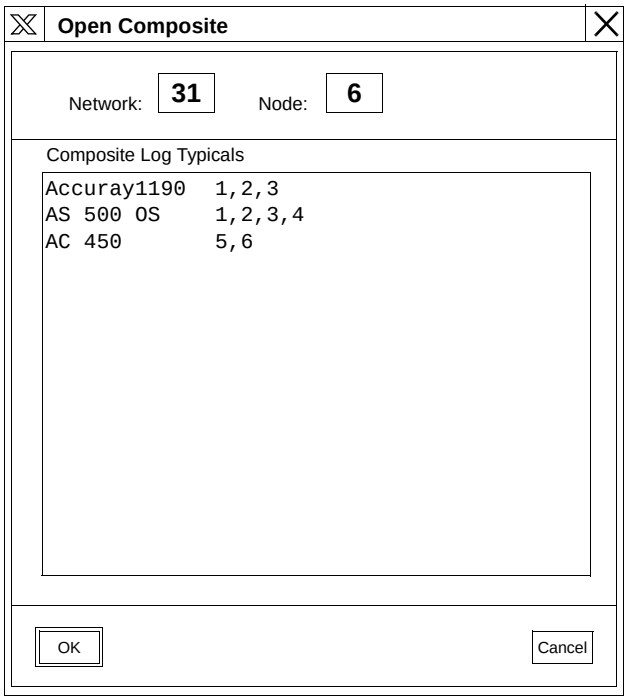


Figure 3-194. Dialog box for open composite log

All composite log typicals defined are presented with their names and log group numbers. If no composite log typicals are available you must create at least one prior to being able to open the composite log configuration. You do so by using the **Create typical** described below.

If composite log typicals appear:

- Enter the network and node that the composite log typical is attended to work against.
- Click on a composite log typical to use.
- Click OK to verify your selection or Cancel to interrupt the operation.

Create Typical… When selected, a dialog box is displayed. In the box, you can create composite log typicals.

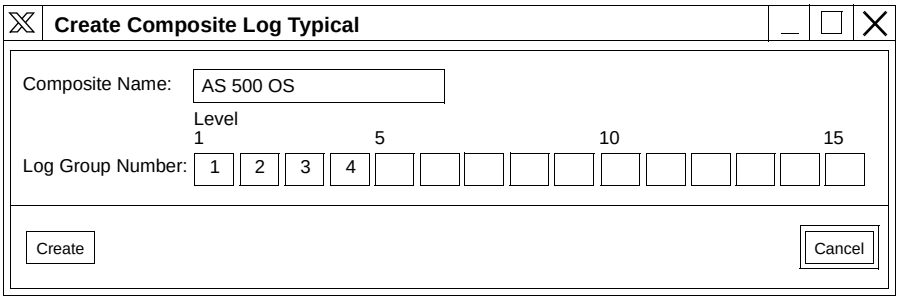


Figure 3-195. Dialog box for create composite log typical

To create a composite log typical you must:

- Enter a name.
- Enter the log group numbers you would like this typical to consist of.
- Click Create to create the typical or Cancel to interrupt the operation.

Delete Typical… When selected, a dialog box is displayed. In the box, you can delete any existing composite log typical by stating its name.

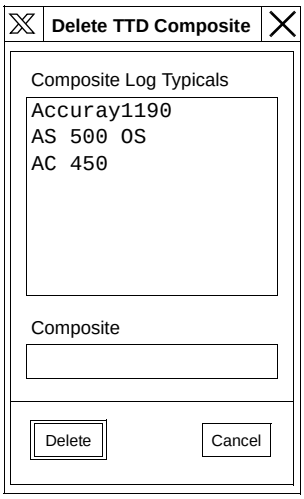


Figure 3-196. Dialog box for deleting composite log typicals

To delete a composite log typical you must:

- Enter the name of the composite log typical you want to remove.
- Click Delete to commit the deletion or Cancel to interrupt the operation.

Edit ... Makes it possible to do changes to existing composite logs.

Delete ... Removes all the actual logs in the MasterPiece/MasterView Series.

Activate Starts collecting data for all logs in the composite log that are not already activated. This action is taking place in the Advant Controller 400 Series or MasterPiece 200/1 and not in the operator station.

Deactivate Deactivates the data collection for the composite log.

Activate All Starts collecting data for all logs in all composite logs presented in the list.

Deactivate All Deactivates the data collection for all composite logs in the list.

LogGroup

The log group menu contains operations that can be carried out for all logs in the log group.

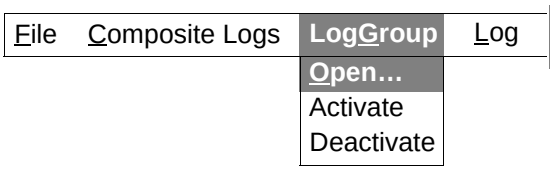


Figure 3-197. Log Group menu for trend data configuration

Open… When selected, a dialog box is displayed. In the box, you choose which log group you wish to have presented in the Main Window.

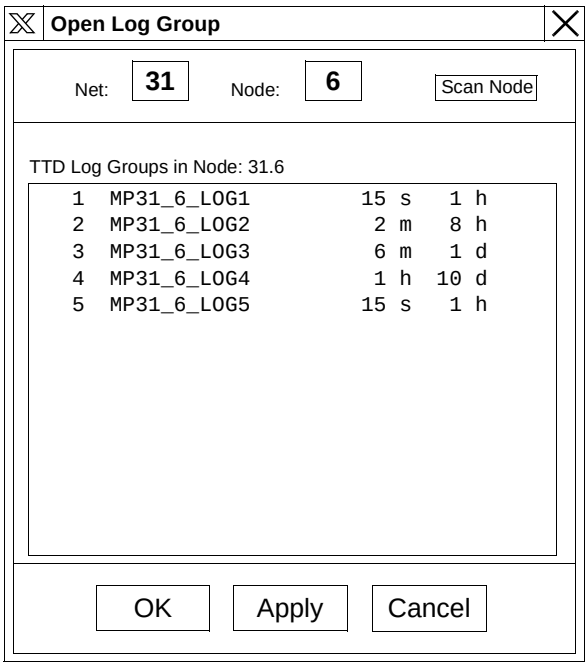


Figure 3-198. Dialog box for open log group

- Enter network and node and press the **Scan Node** button.

  All log groups in the node are displayed in the box. The information contains, in the following order, log group number, log group name, storage interval and storage capacity. And as mentioned before, the maximum number of available log groups is limited to 15.

To open a log group you must do as follows:

a. Click on a log group.

b. Press **OK** or **Apply**.

OK

Terminates the dialog after updating the Main Window with information from the chosen log group.

Apply

Updates the Main Window with information from the chosen log group. The dialog box remains on screen and no interaction is possible with the Main Window.

Cancel

Terminates the dialog without updating of the Main Window.

Activate	Starts logging all logs in the log group that are not active.
Deactivate	Deactivates all logs in the log group that are active.

Log

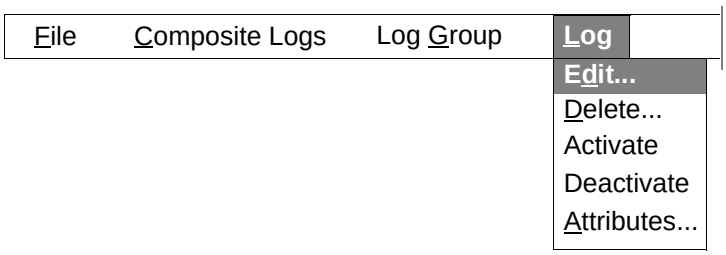


Figure 3-199. Log Menu for TTD Configuration

Edit...	Adds a log source, for example AI1.8 (Object Name) to Advant Controller 400 Series or MasterPiece 200/1 or edits an existing log.

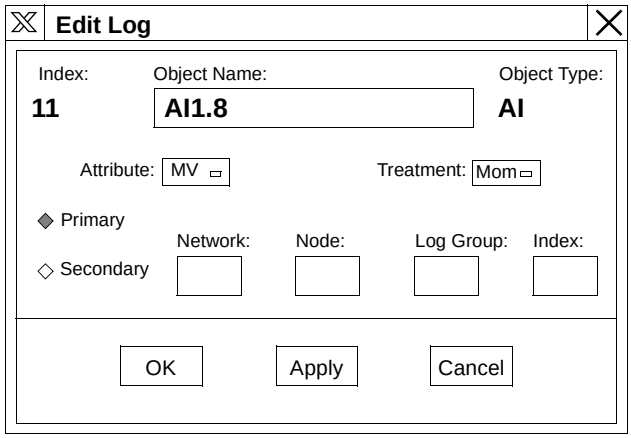


Figure 3-200. Dialog box for edit log

- Select a log in the Main Window.

  a. Select **Edit** in the menu.

     The Edit Log dialog box is displayed.

  b. Enter values for the log as follows:

     Index

     Log sequence number within the log group. The number is automatically filled in depending on the position in Main Window and is not possible to change.

     Object Name

     Enter the name of the object that is to be logged here. Terminate with a carriage return, which will execute an automatic search of the object type.

     Object Type

     Automatically filled in based on the object name, if the object is actually found. If the object is not found, an operator message is sent indicating the object name is not valid.

     Attribute

     Acceptable attributes to log for this object type. Click on the button. A list of available alternatives is presented. Click on the selected attribute.

Treatment

Four treatments are available: **Mom** (momentary), **Mean**, **Max** and **Min**. The treatment should always be Mom for primary logs. There are exceptions for specially configured log groups.

Primary / Secondary

Toggle buttons, that is, you can press only one at a time. If **Primary**, no additional information is required.

If **Secondary**, you must enter the following data:

NOTE

All of this information is given in reference to the log from which data should be fetched. Please be certain that the log fetches data from the object you enter.

Net

Defines the network where the log resides from which data is fetched. The number is automatically filled in depending on the position in Main Window and must not be changed.

Node

Defines the node where the log resides from which data is fetched. The number is automatically filled in depending on the position in Main Window and must not be changed.

Log Group

The index number for the log group used as source to this log group.

Index

The log sequence number within the log group. The number is automatically filled in depending on the position in Main Window and is recommended to not be changed.

Delete...	Removes a selected log.
Activate	Activates a selected log.
Deactivate	Deactivates a selected log.
Attributes...	Log attributes that can be edited.

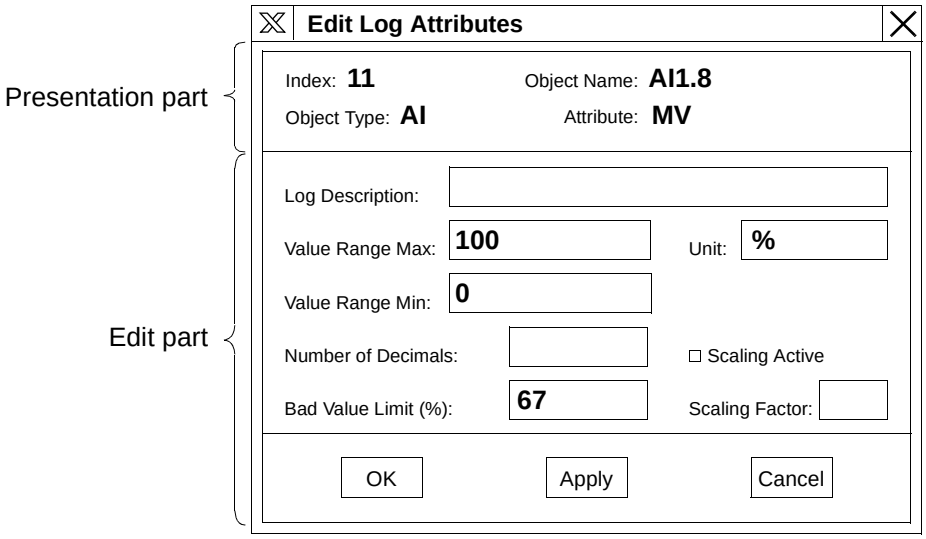


Figure 3-201. Edit Log Attributes dialog box

Presentation part:

Index

Log sequence number within the log group.

Object Name

The name of the logged object.

Object Type

The type of the logged object.

Attribute

The attribute of the logged object.

Edit part:

Log Description

The extended description for this log.

Value Range Max

The upper limit for the value, used in presentation.

Value Range Min

The lower limit for the value, used in presentation.

Number of Decimals

The precision of the value. Used in MasterView 800/1 stations only.

Unit

The unit of the value.

Bad Value Limit (%)

Applies to secondary logging only. Defines in a percentage the required ratio of successful samples.

Scaling Active

Tells whether the sampled value should be multiplied with the scaling factor before being stored.

Scaling Factor

The factor to multiply with when scaling is active.

3.3.16.2 Log Group Information

The upper portion of the Main Window contains information about the log group for which the log information is presented.

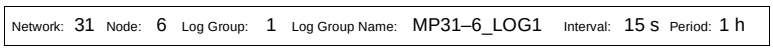


Figure 3-202. Log group info in the Log Configuration main window

A log group is uniquely identified by its name, or by its log group number together with the network and node

Network / Node

Defines the network and node in which this log group exists.

Log Group

The number of the current log group.

Log Group Name

The name of the current log group.

Interval

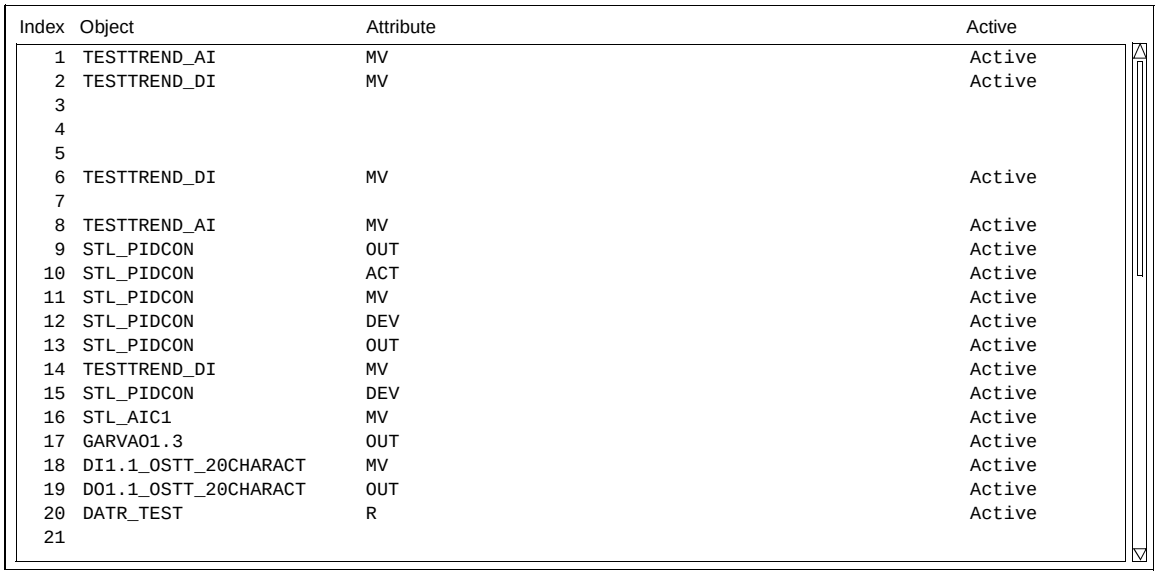
The interval between two consecutive stored values for this log group.

Period

The amount of time for which this log group stores data.

3.3.16.3 Composite Log Information window

The composite log info part of the composite log window contains information about all configured composite logs.



Index	Object	Attribute	Active
1	TESTTREND_AI	MV	Active
2	TESTTREND_DI	MV	Active
3			
4			
5			
6	TESTTREND_DI	MV	Active
7			
8	TESTTREND_AI	MV	Active
9	STL_PIDCON	OUT	Active
10	STL_PIDCON	ACT	Active
11	STL_PIDCON	MV	Active
12	STL_PIDCON	DEV	Active
13	STL_PIDCON	OUT	Active
14	TESTTREND_DI	MV	Active
15	STL_PIDCON	DEV	Active
16	STL_AIC1	MV	Active
17	GARVAO1.3	OUT	Active
18	DI1.1_OSTT_20CHARACT	MV	Active
19	DO1.1_OSTT_20CHARACT	OUT	Active
20	DATR_TEST	R	Active
21			

Figure 3-203. Composite log information window

Index

Log sequence number within the log group.

Object

The name of the logged object.

Attribute

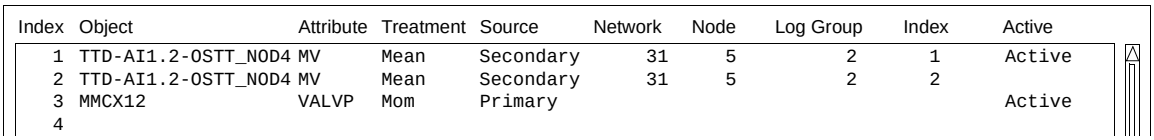
The attribute of the object. Examples of logged attributes are MV, OUT, DEV, and so on.

Active

Indicates if the log is active, that is has started to collect data.

3.3.16.4 Log Information window

The log information window contains information about all logs in the log group.



Index	Object	Attribute	Treatment	Source	Network	Node	Log Group	Index	Active
1	TTD-AI1.2-OSTT_NOD4	MV	Mean	Secondary	31	5	2	1	Active
2	TTD-AI1.2-OSTT_NOD4	MV	Mean	Secondary	31	5	2	2	
3	MMCX12	VALVP	Mom	Primary					Active
4									

Figure 3-204. Log information window

Index

Log sequence number within the log group.

Object

The name of the logged object.

Attribute

The attribute of the object. Examples of logged attributes are MV, OUT, DEV, and so on.

Treatment

Four different treatments are available: **Mom** (momentary), **Mean**, **Max** and **Min**. The last three applies especially to secondary logs. Primary logs must always be set to Mom and it can not handle any calculated treatments like Mean, Max and Min.

Source

Indicates if the logging is primary or secondary. A primary log is indicated with the text "Primary." For secondary logs, indicated with the text "Secondary," that is, data is accessed from another log, additional information is available in Network, Node, Log Group and Index.

Network / Node

Network and node of the log from which data is accessed.

Log Group

Number of the log group from which data is accessed.

Index

Log number within log group from which data is accessed.

Active

Indicates if the log is active, that is has started to collect data.

3.3.17 Trend System Configuration

All trend displaying is based on a database that contains information about all logs present in the system. This log database is created/updated by a separate log database tool. You must be an authorized user (that is have the authorization key) to run this tool.

If you update the log database in one operator station, for example osn63 (see Figure 3-205), the tool that updates the log database can only find nodes on the same network as the operator station from which the operation is run (that is network 31).

In each operator station that you use or will use trend displays, you must create a Log Database. This Log Database contains such data as object name, description, attribute, treatment, log period and storage interval. This Log Database is necessary for the trend display function and run-time operation.

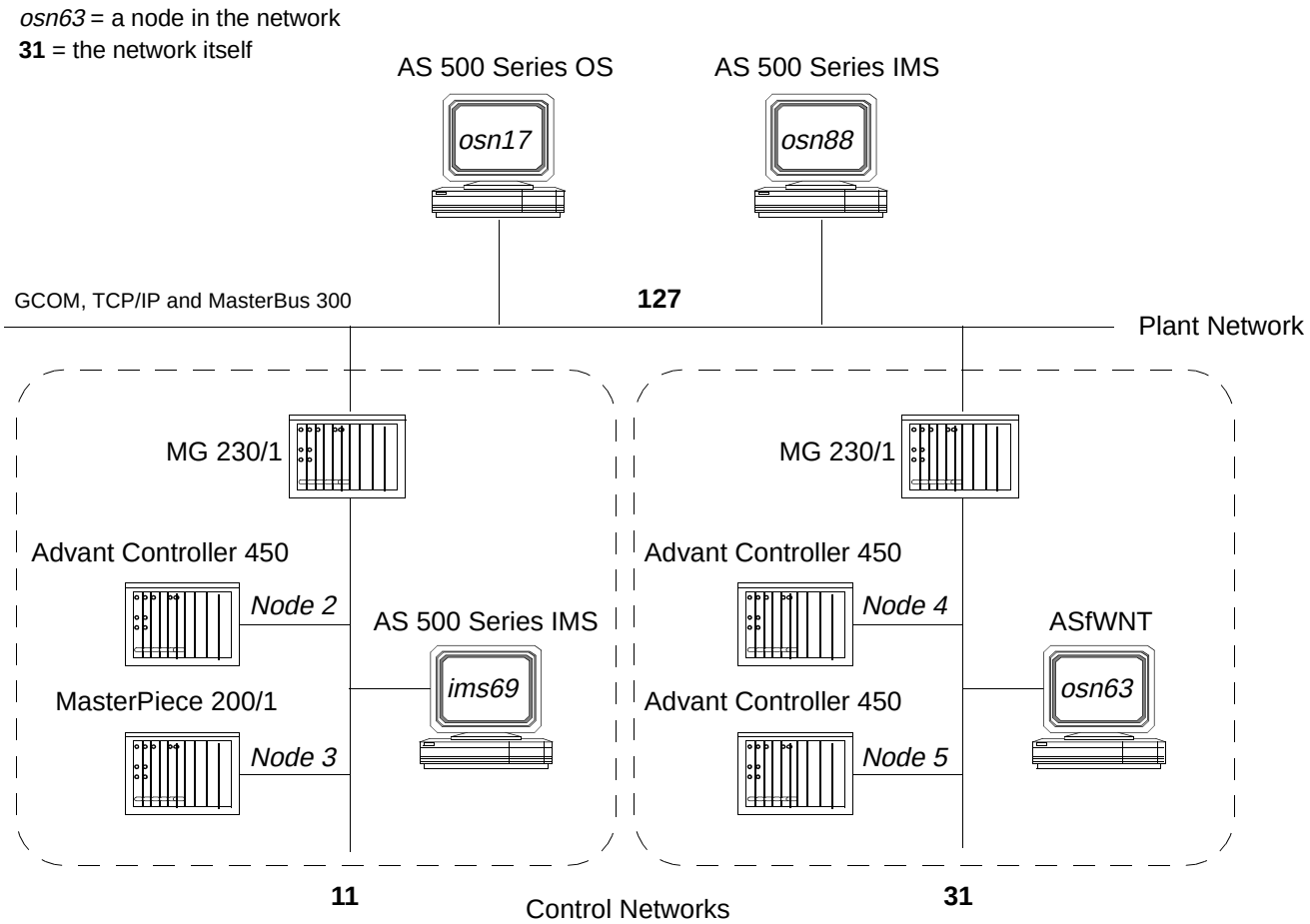


Figure 3-205. Example of an ABB Master automation system

3.3.17.1 Tutorial

This tutorial describes some typical steps that you have to perform to create and update the Log Database that is needed for trend displaying in one operator station.

NOTE

You have to create and update the Log Database in all operator stations.

The following steps are described in this tutorial:

- Create the Log Database
- Add a Node
- Delete a Node
- Activate/Deactivate a Node
- Update the Log Database

NOTE

When the operator station is on a plant network and you want to see the nodes in the control networks you must first run the Node Broker (see Section 5.1.6 Node Broker). Otherwise the Log Database Configuration tool will not be able to communicate with those nodes.

Create the Log Database

To create a new Log Database, do as follows:

1. Click on **System Config** under the item **System Display Keys** in the pop-up menu **Operation.**

   The following set of dynamic function keys is presented at the bottom of the screen:

D1 AdvaCommand…	D2 AdvaBuild…	D3	D4	D5
D6 Settings…	D7 Station…	D8 Maintenance…	D9	D10

Figure 3-206. Dynamic function keys - System Configuration dialog

2. Press **F8** or click on the screen button D8 (Maintenance…).

   If you have selected **Max dialog** in the pop-up menu **Operation**, the following set of dynamic function keys is displayed at the bottom of the screen:

D1 RTA Board Backup	D2 Station Backup	D3	D4 RTA Board Config.	D5 View Diagnostic Log
D6 Object References	D7 Node Broker	D8 Log Database Config	D9	D10

Figure 3-207. Dynamic function keys - System Configuration dialog - D8 Maintenance…

NOTE

You can not create and update the Log Database without access to the Max dialog.

3. Press **F8** or click on the screen button D8 (Log Database Config).

   The Log Database Configuration dialog box is presented (see Figure 3-210). Initially it is empty due to the fact that the data base does not exist until the tool is run for the first time.

   At the same time the trend function starts to scan the network for all available nodes (PS and IMS) and a small information dialog box appears overlapping the Log Database Configuration dialog box.

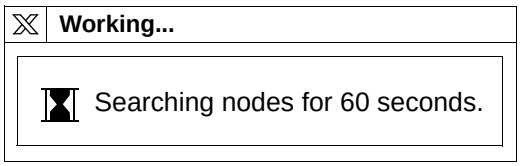


Figure 3-208. Information dialog box - Searching nodes

After 60 seconds when all reachable nodes are found it is replaced by another dialog box.

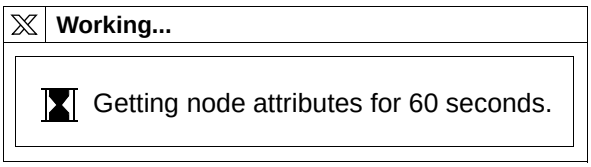


Figure 3-209. Information dialog box - Getting node attributes

When the tool has found all nodes and determined whether they are PS or IMS, this dialog box is replaced by the previous one which re-appears again for a short time until the scan has been completed. The node information found on the network is displayed in the Log Database Configuration dialog box.

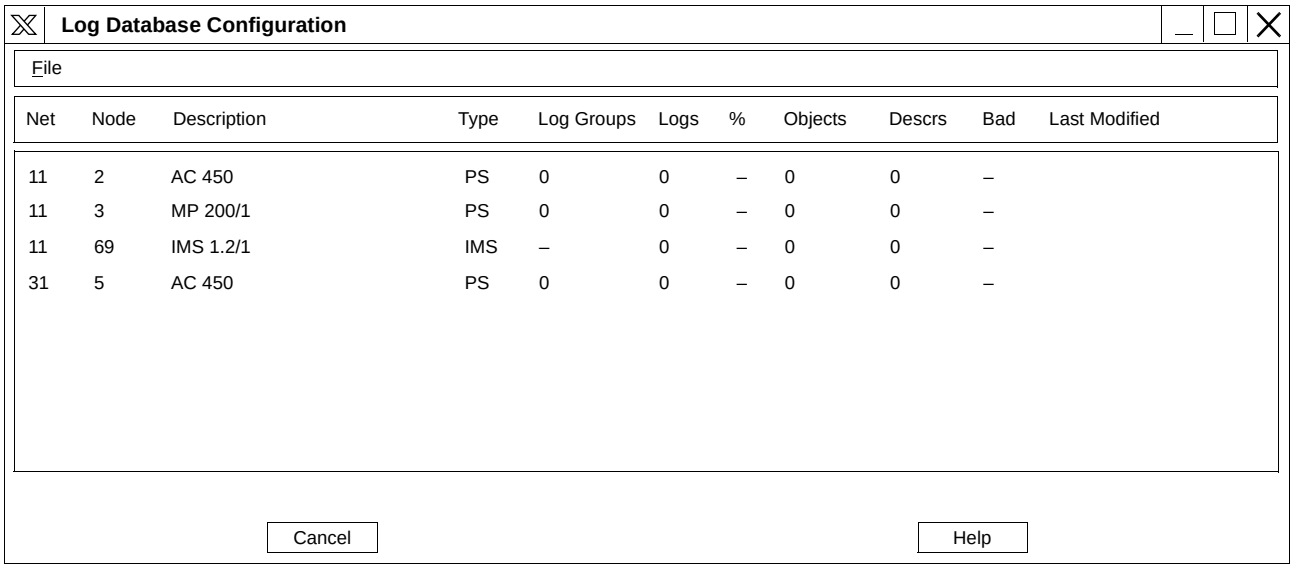

Log Database Configuration
File
Net Node Description Type Log Groups Logs % Objects Descrs Bad Last Modified
11 2 AC 450 PS 0 0 – 0 0 –
11 3 MP 200/1 PS 0 0 – 0 0 –
11 69 IMS 1.2/1 IMS – 0 – 0 0 –
31 5 AC 450 PS 0 0 – 0 0 –
Cancel
Help

Figure 3-210. Log Database Configuration dialog box (showing data as if it was computed from plant network)

From the **File** menu you can add, remove and activate nodes in the database, set up network management and create/update a new/existing Log Database.

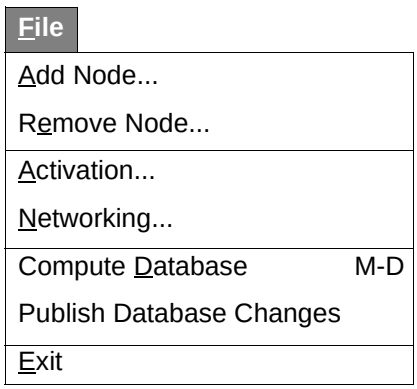


Figure 3-211. File menu in the Log Database Configuration

Before you perform any of these tasks check if all nodes have been found (and listed in the Log Database Configuration dialog box). If you are not sure about a node's status, you can verify it in the System Status overview display.

Do as follows:

a. Select the subitem **System Status** from the item System Display Keys in the **Operation** pop-up menu.

   The System Status overview display is presented.

b. Check the system status of those nodes that the node search did not find.

   For more information about the System Status, see Section 4.2.3 AdvaCommand System Status.

4. When you are finished with all configurations (that is add nodes in the database and/or set up network management), select **Compute Database** in the **File** menu to create the Log Database.

Add a Node

To add node 4 on network 31, do as follows:

1. Select **Add Node...** in the **File** menu.

   The **Add Node** dialog box is presented.

2. Enter the Network and Node numbers (and if wanted a description) in the appropriate entry fields.

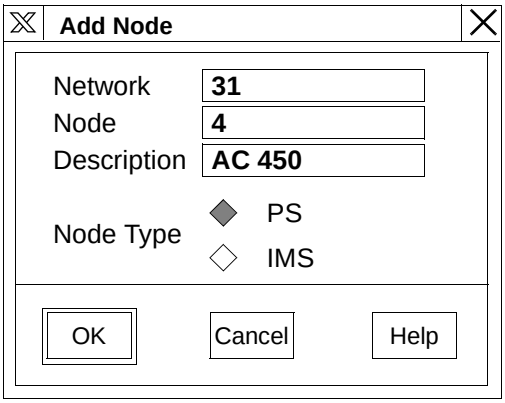


Figure 3-212. Add Node dialog box

3. Click on the **OK** button.

   The Add Node dialog box disappears and the new node has been added in the Log Database Configuration dialog box, but not yet in the Log Database.

NOTE

You must update the Log Database, otherwise the new node (which has to be active) will not be included.

4. Select **Compute Database** in the **File** menu to update the Log Database.

Delete a Node

To delete node 3 on network 11, for example because it s an old PS (process station) that no longer is used in the system, do as follows:

1. Select **Remove Node...** in the **File** menu.

   The **Remove Node** dialog box is presented.

2. Select node 3 in network 11 in the Nodes field.

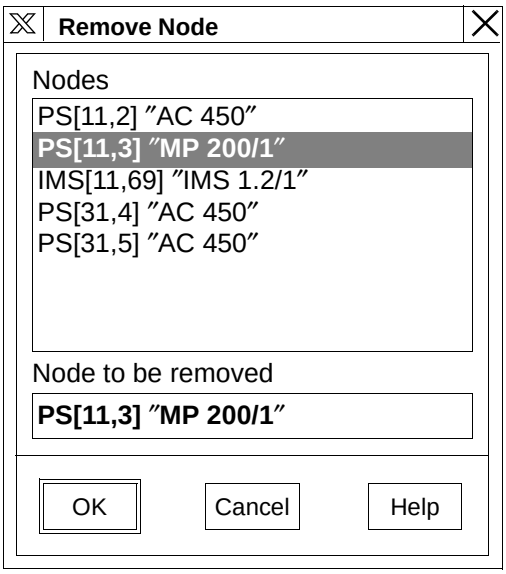


Figure 3-213. Remove Node dialog box

3. Click on the **OK** button.

   The Remove Node dialog box disappears and the selected node has been removed from the Log Database (and is not visible anymore in the Log Database Configuration dialog box).

NOTE

When the node is removed all information about it in the Log Database is cleared/erased at the same time, which means that is there is no need to update the Log Database.

Activate/Deactivate a Node

We want to deactivate node 5 on network 31, for example because someone has just started to configure it and it is then not possible to communicate with it. We can then activate and collect logged objects and logs from it at a later time/occasion.

1. Select **Activation...** in the **File** menu.

   The **Activation Table** dialog box is presented.

2. Deactivate nodes with error status (indicated in the System Status display) by clicking on those nodes in the Activation Table (or use the **Select All** or **Unselect All** buttons).

   An empty square indicates a deactivated node. Those nodes are not included when the Log Database is updated. There is no problem to later on activate those nodes and update the Log Database again.

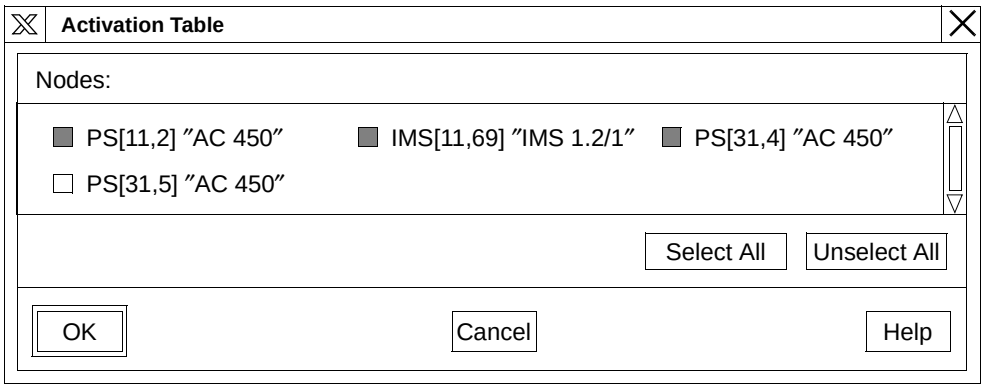


Figure 3-214. Activation Table dialog box

3. Click on the **OK** button.

   The Activation Table dialog box disappears and the selected node has been deactivated in the Log Database.

   The information about the node in the Log Database Configuration dialog box is dimmed when the node is not active. The deactivated node can be activated separately at a later occasion.

NOTE

Nodes without any connection should be deactivated to avoid unnecessary activities in the system. To optimize the time it will take to update the Log Database it is recommended that only those nodes that are new, reconfigured or initially not yet have been searched are activated.

Update the Log Database

To update the Log Database after the changes in the set of nodes, do as follows:

1. Select **Compute Database** in the **File** menu.

   The Log Database Configuration starts to update the Log Database. This is indicated in the % column in the dialog box and by the shape of the cursor (a clock).

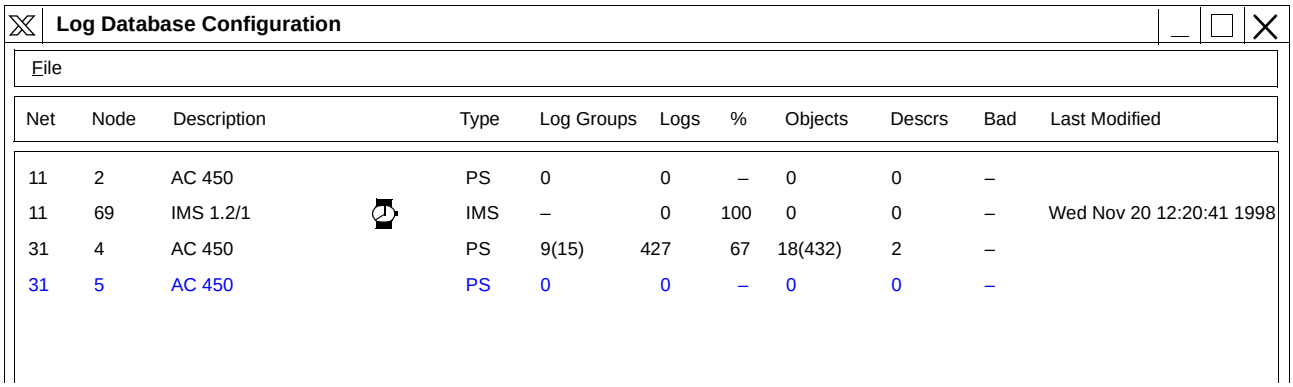

Log Database Configuration
File
Net Node Description Type Log Groups Logs % Objects Descrs Bad Last Modified
11 2 AC 450 PS 0 0 – 0 0 –
11 69 IMS 1.2/1 IMS – 0 100 0 0 – Wed Nov 20 12:20:41 1998
31 4 AC 450 PS 9(15) 427 67 18(432) 2 –
31 5 AC 450 PS 0 0 – 0 0 –

Figure 3-215. Log Database Configuration dialog box (during database update)

When the Log Database has been updated, a small information dialog box appears overlapping the Log Database Configuration dialog box.

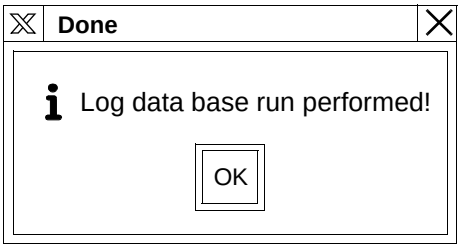


Figure 3-216. Done information dialog box

When the new Log Database has been created it will be in use within 10 minutes on the local node.

NOTE

You must update the Log Database again every time you add a node or do any configuration in a node.

2. Click on the **OK** button.

   The information dialog box disappears. The needed system configuration for the trend function is now completed.

3. Select **Exit** in the **File** menu.

   The Log Database Configuration dialog box disappears.

3.3.17.2 Log Database Configuration

All trend displaying is based on a data base that contains information about all logs present in the system. This Log Database is created/updated in the Log Database Configuration dialog box. You must be an authorized user (that is have the authorization key) to run this tool.

To present the Log Database Configuration dialog box on the screen, do as follows:

1. Click on **System Config** under the item **System Display Keys** in the pop-up menu **Operation.**
2. Press **F8** or click on the screen button D8 (Maintenance…).
3. Press **F8** or click on the screen button D8 (Log Database Config.).

   The Log Database Configuration dialog box is presented.

The **node information** found on the network is displayed in the dialog box and from the **File menu** you can add, remove and activate nodes in the data base, set up network management, create/update a new/existing Log Database and publish the Log Database.

The Log Database Configuration dialog box is empty until the Log Database has been created.

At the same time as dialog box is presented, the trend function starts to scan the network for all available nodes (PS and IMS). See also Section 3.3.17.1 Tutorial.

When the tool has found all available nodes and determined whether they are PS or IMS, the scan is complete. The node information found on the network is displayed in the dialog box.

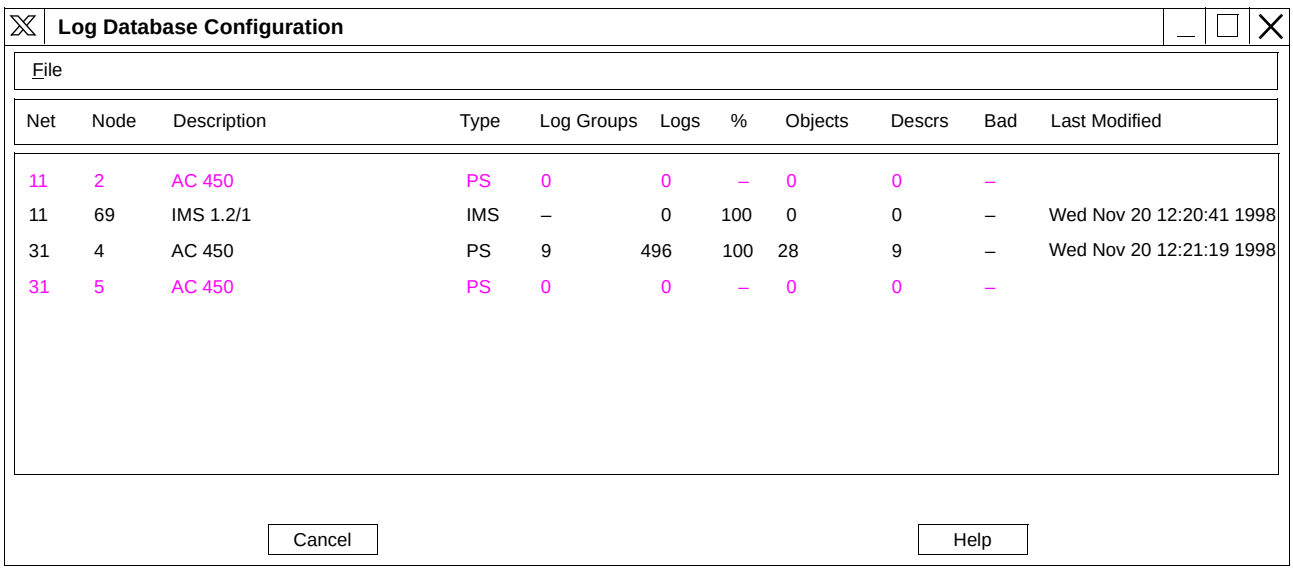

Log Database Configuration
File
Net Node Description Type Log Groups Logs % Objects Descrs Bad Last Modified
11 2 AC 450 PS 0 0 – 0 0 –
11 69 IMS 1.2/1 IMS – 0 100 0 0 – Wed Nov 20 12:20:41 1998
31 4 AC 450 PS 9 496 100 28 9 – Wed Nov 20 12:21:19 1998
31 5 AC 450 PS 0 0 – 0 0 –
Cancel
Help

Figure 3-217. Log Database Configuration dialog box

Node Information

You can find the following node information in the dialog box:

- **Net**

  The node's network number.

- **Node**

  The node number.

- **Description**

  The node description.

- **Type**

  The node type. There are two types available:

  – PS (Process Station)

  – IMS (Information Management Station).

- **LogGroups**

  The number of log groups defined for each node that are found during the scanning. The maximum number of log groups for a process station (PS) is 15.

- **Logs**

  The number of active logs for the node that are found during the scanning.

- **Completed percentage (%)**

  The percentage of logs that have been scanned in a node during the creation/updating of the Log Database. A node has been completely scanned when the number reaches 100.

- **Objects**

  The number of objects for a node that are found during the scanning.

- **Descrs**

  The number of found objects that have a description.

- **Bad**

  Indicates if some error(s) were found during the scanning. The number is equal to the number of errors.

- **Modified**

  The time when the node was most recently scanned. If it is empty, then that node is NOT included in the Log Database.

File Menu

From the **File** menu you can add, remove and activate nodes in the data base, set up network management, create/update a new/existing Log Database, publish the new Log Database and exit the Log Database Configuration tool.

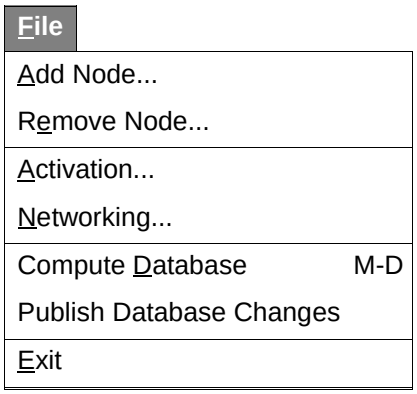


Figure 3-218. File menu in the Log Database Configuration

Before you perform any of these tasks check if all nodes have been found (and listed in the Log Database Configuration dialog box). If you are not sure about a node's status, you can verify it in the System Status overview display. See also Section 3.3.17.1 Tutorial.

Add Node...

With the **File** menu item **Add Node...** you can add new nodes in the data base.

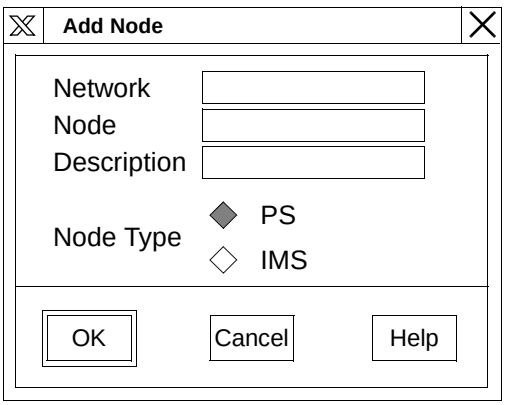


Figure 3-219. Add Node dialog box

To add a node on a network, do as follows:

1. Select **Add Node...** in the **File** menu.

   The **Add Node** dialog box is presented.

2. Enter the Network and Node numbers (and if wanted a description) in the appropriate entry fields.

   Network

   The node's network number.

   Node

   The node number.

   Description

   The node description.

   Node Type

   The node type. There are two types available:

   – PS (Process Station)

   – IMS (Information Management Station).

3. Click on the **OK** button.

   The Add Node dialog box disappears and the new node has been added.

   OK

   To add the new node and close the dialog box, click on the **OK** button.

   Cancel

   To cancel a configuration and close the dialog box, click on the **Cancel** button.

   Help

   To bring up the help dialog box, click on the **Help** button.

Remove Node... With the **File** menu item **Remove Node...** you can remove nodes in the data base.

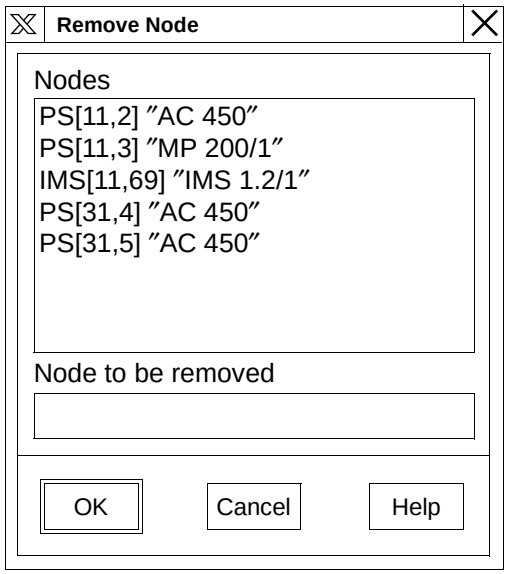


Figure 3-220. Remove Node dialog box

To delete a node on a network, for example because it s an old PS (process station) that no longer is used in the system, do as follows:

1. Select **Remove Node...** in the **File** menu.

   The **Remove Node** dialog box is presented.

2. Select a node in the Nodes field. The same node name as the selected node appears in the field 'Nodes to be removed'.

   The names listed in the Nodes field have the following format:

   Node type[Network number,Node number] "Description"

3. Click on the **OK** button.

   The Remove Node dialog box disappears and the selected node has been removed from the Log Database (and is not visible anymore in the Log Database Configuration dialog box).

   OK

   To remove a node and close the dialog box, click on the **OK** button.

   Cancel

   To cancel a configuration and close the dialog box, click on the **Cancel** button.

   Help

   To bring up the help dialog box, click on the **Help** button.

Activation...

With the **File** menu item **Activation...** you can activate/deactivate nodes. Later when you do a Complete Database Changes only active nodes will be processed, that is searched for active logs.

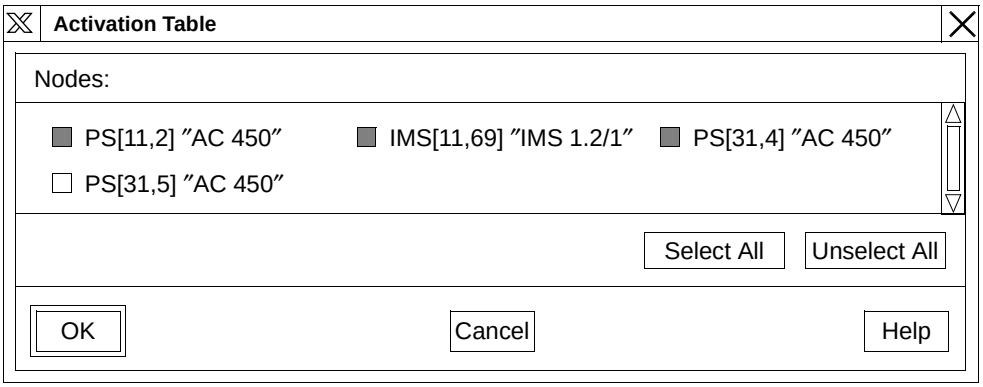


Figure 3-221. Activation Table dialog box

We want to deactivate a node, for example because someone has just started to configure it and it is then not possible to communicate with it. We can then activate and collect logged objects and logs from it at a later time/occasion.

Do as follows:

1. Select **Activation...** in the **File** menu.

   The **Activation Table** dialog box is presented.

2. Deactivate nodes with error status (indicated in the System Status display) by clicking on those nodes in the Activation Table (or use the **Select All** or **Unselect All** buttons).

   Select All

   To select all nodes in the Activation Table, click on the **Select All** button.

   Unselect All

   To unselect all nodes in the Activation Table, click on the **Unselect All** button.

   An empty square indicates a deactivated node. Those nodes are not included when the Log Database is updated. There is no problem to later on activate those nodes and update the Log Database again.

3. Click on the **OK** button.

   The Activation Table dialog box disappears and the selected node has been deactivated in the Log Database.

   The information about the node in the Log Database Configuration dialog box is dimmed when the node is not active. The deactivated node can be activated separately at a later occasion.

NOTE

Nodes without any connection should be deactivated to avoid unnecessary activities in the system. To optimize the time it will take to update the Log Database it is recommended that only those nodes that are new, reconfigured or initially not yet have been searched are activated.

OK

To remove a node and close the dialog box, click on the **OK** button.

Cancel

To cancel a configuration and close the dialog box, click on the **Cancel** button.

Help

To bring up the help dialog box, click on the **Help** button.

Networking... With the **File** menu item **Networking...** you can set up network management.

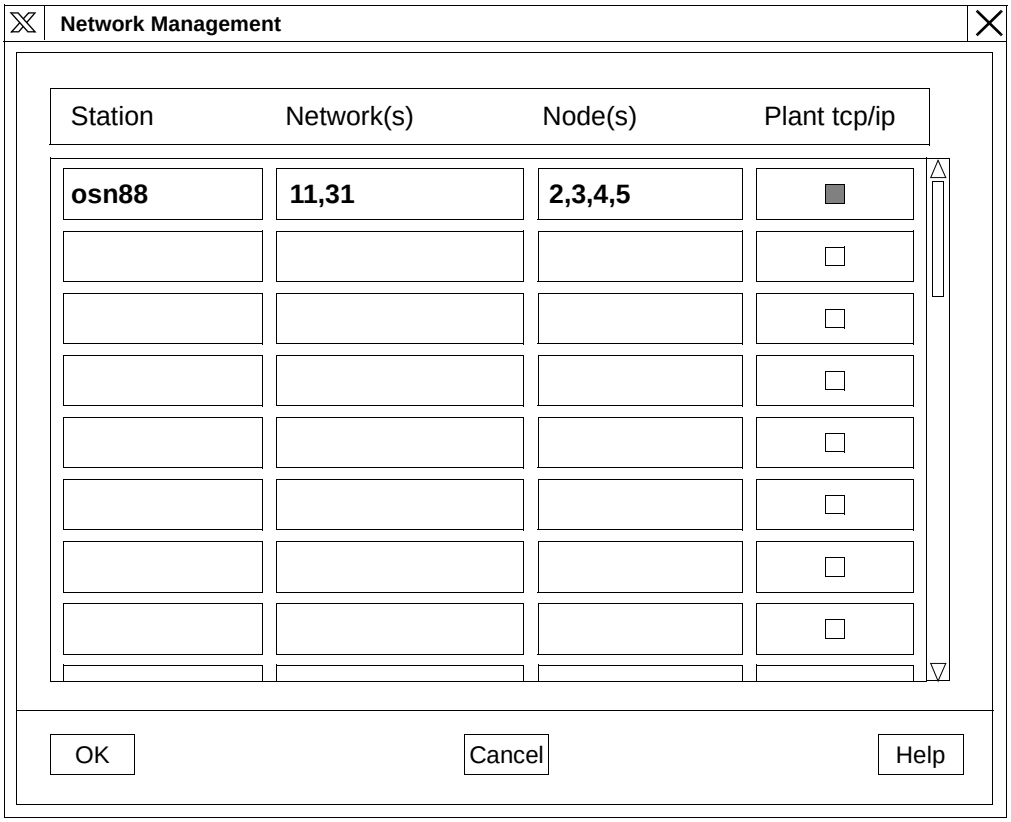


Figure 3-222. Network Management dialog box

To specify a host to service a node or network through the TCP/IP network, do as follows:

1. Select **Networking...** in the **File** menu of the Log Database Configuration.

   The **Network Management** dialog box is presented.

2. Enter the Station, Network(s) and Node(s) numbers in the appropriate entry fields.

Station	The name (alias) of the operator station which has access to the desired node data.
Network(s)	The network(s) numbers with the desired node data.
Node(s)	The node(s) numbers, that is the process stations, operator stations and IMS stations, with the desired data. If empty then all nodes are assumed.
Plant tcp/ip	Only applicable if the operator station entered in the Station entry field is on the plant network. If the Plant tcp/ip button is activated, an operator station can use the fact that another operator station on the plant network already has an ongoing data request towards objects/logs in process stations on a control network.

3. Click on the **OK** button.

   The Network Management dialog box disappears and the host(s) to service a node or network through the TCP/IP network has been specified.

   OK

   To remove a node and close the dialog box, click on the **OK** button.

   Cancel

   To cancel a configuration and close the dialog box, click on the **Cancel** button.

   Help

   To bring up the help dialog box, click on the **Help** button.

Compute Database — With the **File** menu item **Compute Database** you can create/update a new/existing Log Database.

To update the Log Database after the changes in the set of nodes, do as follows:

1. Select **Compute Database** in the **File** menu.

   The Log Database Configuration starts to update the Log Database. This is indicated in the % column in the Log Database Configuration dialog box and by the shape of the cursor (a clock).

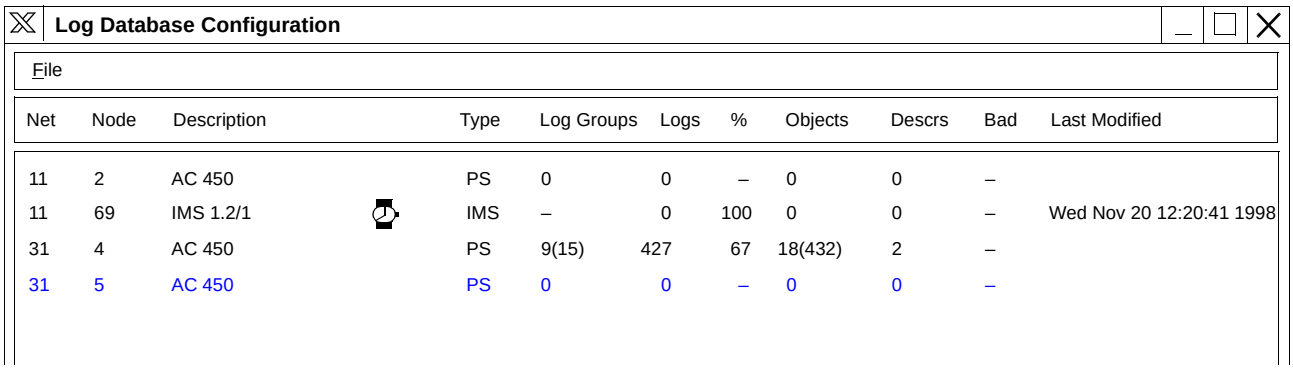

Log Database Configuration
File
Net Node Description Type Log Groups Logs % Objects Descrs Bad Last Modified
11 2 AC 450 PS 0 0 – 0 0 –
11 69 IMS 1.2/1 IMS – 0 100 0 0 – Wed Nov 20 12:20:41 1998
31 4 AC 450 PS 9(15) 427 67 18(432) 2 –
31 5 AC 450 PS 0 0 – 0 0 –

Figure 3-223. Log Database Configuration dialog box (during data base update)

When the Log Database has been updated, a small information dialog box appears overlapping the Log Database Configuration dialog box.

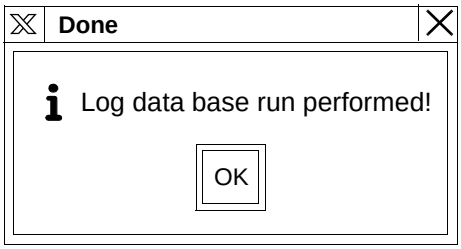


Figure 3-224. Done information dialog box

When the new log database has been created it will be in use within 10 minutes on the local node.

NOTE

You must update the Log Database again every time you add a node.

2. Click on the **OK** button.

   The information dialog box disappears. The needed system configuration for the trend function is now completed.

Publish Database Changes

With the **File** menu item **Publish Database Changes** you update the trend system with the latest changes in the data base.

When you select **Publish Database Changes** a small information dialog box appears ovelapping the Log Database Config. dialog box.

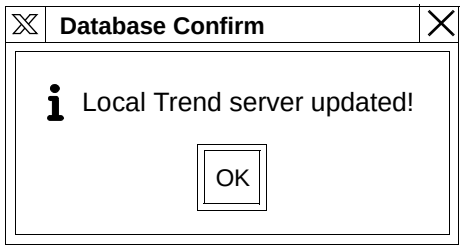


Figure 3-225. Database Confirm dialog box

If not activated it will take approximately 10 minutes until the trend system automatically update itself with the new changes.

Exit

With the **File** menu item **Exit** you exit the Log Database Configuration tool.

You can also exit the dialog box if you click on the **Cancel** button.

Buttons

There are two buttons in the Log Database Configuration dialog box:

- **Cancel**

  To undo a configuration, click on the **Cancel** button.

  NOTE

  If you decide to cancel a Log Database run, all information entered in the Log Database Configuration dialog box is lost, even if some nodes had already been scanned before the cancelation (according to the Modification column in the dialog box).

- **Help**

  To bring up the help dialog box click on the **Help** button. This brings up the Help dialog box.

3.3.17.3 View Objects in other Networks (through the TCP/IP Network)

The networking function (specified in the Network Management dialog box) gives you a possibility to view log data from other control networks.

Normally, if you update the Log Database in one operator station, the tool that creates/updates the Log Database can only find nodes on the same network as the operator station from which the operation is run, for example network 31 (see Figure 3-226).

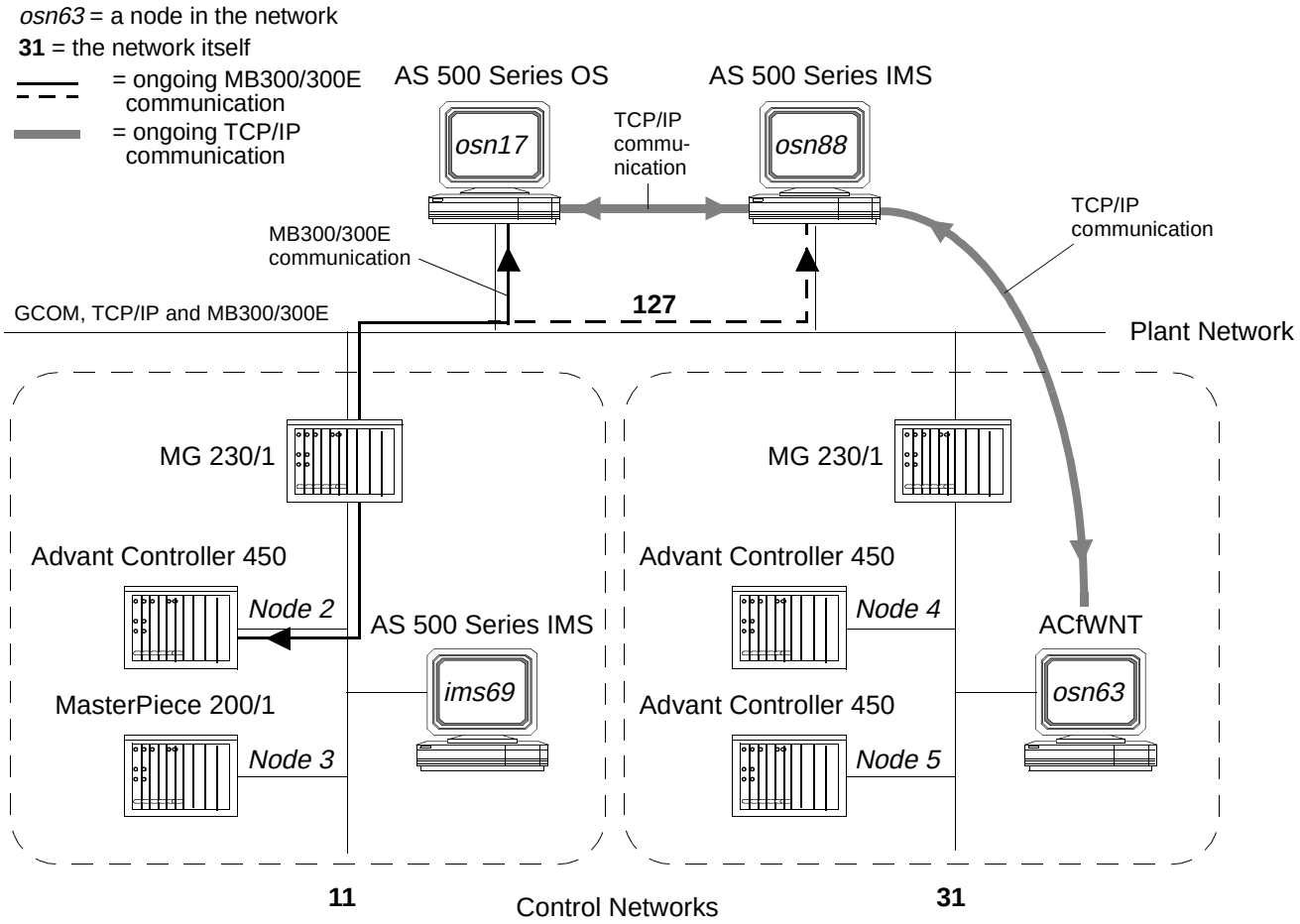


Figure 3-226. Example of an ABB Master automation system

With the networking function you can specify that one operator station service another operator station, which is a PS or an IMS, through the TCP/IP network.

For all network and node numbers within parenthesis in the following text,refer to Figure 3-226.

If an operator station (osn63) on a control network (31) presents a trend display which contains objects from a node (Node 2) on another control network (11), the trend function checks if there is an operator station defined, through the Network Management in the Log Database Configuration tool, to service it with the required data.

In Figure 3-226 osn88 has been defined to service data requests from network 11 and 31 (see Figure 3-227).

The operator station (osn63) requires the needed data from the operator station on the plant network (osn88) through TCP/IP communication. That operator station then gets the log data from the required node (Node 2) through MB300/MB300E communication and transfer it to the operator station on the control network through TCP/IP communication.

If the case is that **Plant tcp/ip** is activated in the Network Management dialog box, the operator station (osn88) will first check if there is another operator station on the plant network (osn17), that already has an ongoing data request towards the required node (Node 2). If this is the case, the operator station gets the required log data from the other operator station through TCP/IP communication and transfer it to the operator station on the control network.

Networking (Network Management)

To specify a host to service a node or network through the TCP/IP network, do as follows:

1. Select **Networking...** in the **File** menu of the Log Database Configuration.

   The **Network Management** dialog box is presented.

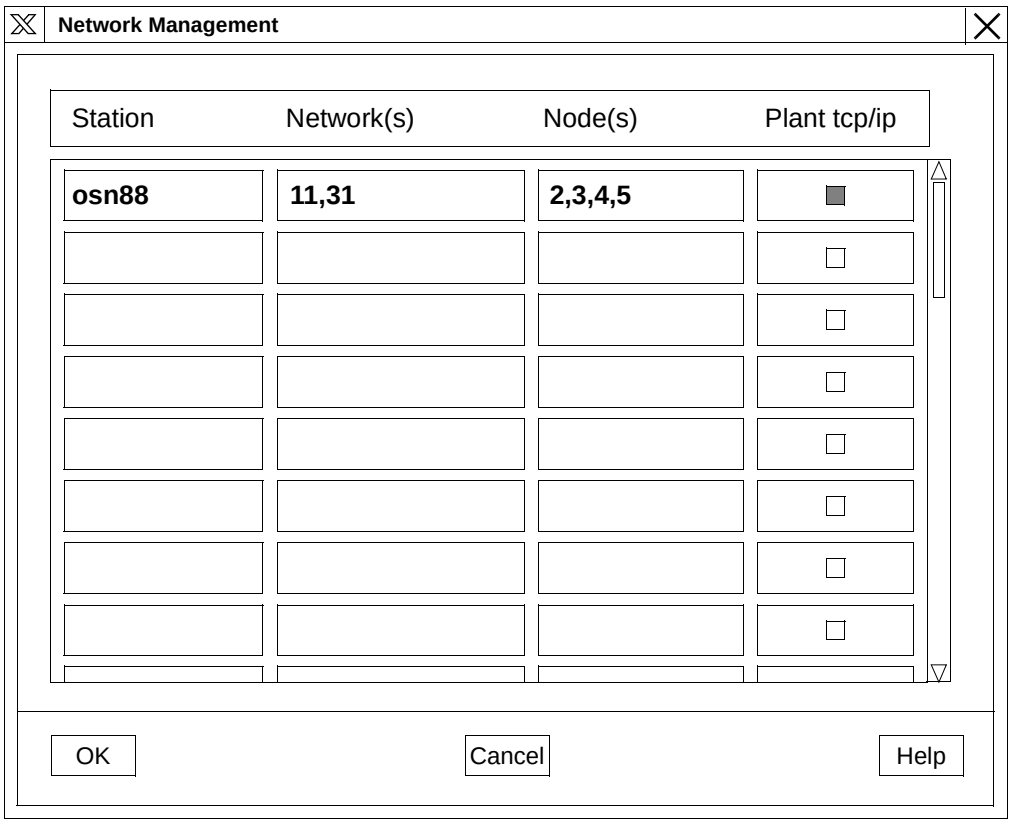


Figure 3-227. Network Management dialog box

2. Enter the Station, Network(s) and Node(s) numbers in the appropriate entry fields.

Station	The name (alias) of the operator station which has access to the desired node data.
Network(s)	The network(s) numbers with the desired node data.
Node(s)	The node(s) numbers, that is the process stations, operator stations and IMS stations, with the desired data. If left empty all possible nodes are assumed.
Plant tcp/ip	Only applicable if the operator station entered in the Station entry field (osn88) is on the plant network. If the Plant tcp/ip button is activated, an operator station (osn88) can use the fact that another operator station (osn17) on the plant network already has an ongoing data request towards objects/logs in process stations on a control network. This will optimize the gate traffic.

3. Click on the **OK** button.

   The Network Management dialog box disappears and the host(s) to service a node or network through the TCP/IP network has been specified.

NOTE

It is not necessary to update the Log Database after a change in the Network Management dialog box.

3.3.17.4 Customize the ObjectTrend and AutoTrend Displays

You can customize the ObjectTrend and the AutoTrend display layout with the ObjectTrend System Variable File.

An **ObjectTrend** can be called up from any process object without creating a display. The user selects an object and invokes the ObjectTrend function. At this point the system creates a temporary display for the object in question.

An **AutoTrend** can be called up from any process display without creating a display. The user selects a trend element in the process display. At this point the system creates a temporary display for the trend element in question.

The temporary displays can be saved and then they become ordinary Trend Displays.

ObjectTrend System Variable Files

Files: `dcObjectTrendDisplay.sv` and `dcObjectTrendDisplay2.sv`

Path: `/products/data/standard/OS/display/Trend`

These files are the ObjectTrend system variable template files. The dcObjectTrendDisplay2.sv file is only used for the object types PIDCON, PIDCONA and MANSTN. If you want to modify the look and feel of the ObjectTrend and the AutoTrend you have to copy all ObjectTrend

system variable files from standard to customer. Then you can modify the dcObjectTrendDisplay.sv and dcObjectTrendDisplay2.sv files in a text editor and do a **No Menu Install** of the display. The result is a customized ObjectTrend and AutoTrend.

3.3.17.5 Modify the TrendDisplay Template

You can modify the TrendDisplay template with the Trend System Variable File.

Trend System Variable File

File: `TrendDisplay.sv`

Path: `/products/data/standard/OS/templates`

This file is the Trend system variable template file. If you want to modify the look and feel of the initial Trend received when building a new trend in the Display Builder you have to copy all TrendDisplay files from standard to customer. Then you can modify the TrendDisplay.sv file in a text editor and those modifications will always be the default values for trend in the Display Builder.

3.3.17.6 Create and Distribute Trend Displays

To create and distribute the different trend displays you use the Display Builder and Display Transfer tools that are included in each operator station (see the manual *AdvaBuild Display Builder User's Guide*.

3.3.17.7 Automated Trend Display Generation

Automated Trend Display Generation is a tool to support the generation of a set of trend displays as well as the maintenance of it.

The tool is actually a tool set consisting of three different tools:

trendgen	Generates a set of trend displays from a control file (text file).
trendextr	The trend extract tool is used to extract control files (text files) from a set of displays that already are in use.
dcDumpLogDb	Is a tool that can take the Log Database for a process station (PS) or information management system (IMS) and generate a control file which will create displays for all objects in the PS or IMS.

The intended usage of this combination of tools is to start to write a trend display control file (or generate one from the process stations and/or IMS's) and then run the *trendgen* tool. Then, after a few weeks (or months), the users of these displays have probably made considerable changes to them and you want to know what displays that are available (to be able to print some description lists or to be able to clean them up), you use the *trendextr* tool to extract a control file. You may then change things and regenerate the displays using the *trendgen* tool once again.

trendgen

The *trendgen* tool generates a set of displays from a text control file (called an adg file). The trend control file contains a set of descriptions where each description is separated from the next by one or more empty lines.

The format of a description is the following:

- It starts with one line containing the display name and description and, optionally, information about whether the display should be modifiable by anyone, a key holder or by nobody and also a directory specification of where the display should be stored.
- Next follows an optional line that contains specifications for the five scope buttons (that is the time ranges to be used for the display).
- The next set of lines in a description describes an object and an attribute that should be shown in the display.
- The first line of the description should start with '+' sign to indicate that only a key holder can modify the display, a '-' sign to indicate that nobody should be able to modify the display.
- Next comes the library (if present) and it should end with '/' which indicates where the display name starts. All characters up to the first blank (or tab) is part of the name and the remainder of the line is considered the description.
- The next optional line containing the time scopes must start with a '[' character. This line must then contain one to five specifications of the form 'N : TEXT' where N is the number of seconds for the scope and TEXT is the button text (leaving the TEXT to the empty string "" will make the system calculate a proper title for the button).
- Following the line containing the display name etc. comes one line for each object to be shown in the trend display. Each line should contain the object name (for the logged object or the LOG object itself) and the name of the attribute of the object to be shown (if no attribute is specified then MV is assumed). Any number of object/attribute combinations may be specified.

Example 1:

```
+PaperMachine/T002 Paper machine temperature display # 1
[ 3600 : "1 HOUR" 7200 : "2 HOURS" 10800 : "3 HOURS" 14400 : "4 HOURS" ]
AIC111_1 MV
PID1174 OUT
```

In the example above a display 'T002' is defined. This display is to only be modified by a key holder, it will reside in the 'PaperMachine' library and it will have the description 'Paper machine temperature display # 1'. The display will show two traces, one for the object AIC111_1 and one for the object PID1174. The display will use the scopes 1, 2, 3 and 4 hours with the supplied texts.

Example 2:

```
T013 Fishing expedition
```

This example defines a display 'T013' which can be modified by anyone. The display have the description 'Fishing expedition'

To run the trendgen tool a number of options needs to be specified.

Syntax:

```
trendgen [-i] [-l library] ADGFILE
```

The options are -i to get the displays to be installed, -l to specify the default library for the display not having a directory specified and the control file containing the display descriptions.

The trendgen tool uses two template files for its generation of new displays. These templates can be copied to the directory from where the tool is execute and changed. The templates used by the tool can be found in the '$ALM_HOME/etc' directory. The two files used are TrendDisplay.ds and TrendDisplay.sv.

Syntax:

```
trendgen -h
```

Gives a presentation of how trendgen can be used.

trendextr

The trend extract tool is used to extract control files from a set of displays that already are in use. The tool can work with source or installed displays. The tool takes the display in the specified libraries (or all libraries) and process these to generate a control file that can be run through trendgen at a later date.

Syntax:

```
trendextr [-i] [-l LANG] [-o outfile] [-nt] LIBRARIES...
```

The trend tool takes a number of arguments, the libraries to examine (if no libraries are specified then all libraries found are examined), an option that specifies if installed or source directories should be examined, the language library to examine if installed displays are to be examined and the name of the output file generated. If no output file is specified then trenddata.out is generated. You may also specify an option to not extract the scope buttons (-nt).

Syntax:

```
trendextr -h
```

Gives a presentation of how trendextr can be used.

Example:

To run through all displays in the Trends library and generate a control file (an adg) for all displays, the following command can be used.

Syntax:

```
trendextr -i -l swedish -o Trends.adg Trends
```

dcDumpLogDb

The dcDumpLogDb tool is part of the configuration tools for the trend display function. This tool can be used with a special argument, '-adg' to generate a control file for trend display generation. By using this tool you can easily generate a set of displays containing all objects in a process station or IMS.

Example:

To generate a control file (an adg) for each node, the following command can be used.

Syntax:

```
dcDumpLogDb -adg $ALM_DATA/NODE*.ldb
```

Syntax:

```
dcDumpLogDb -h
```

Gives a presentation of how dcDumpLogDb can be used.

3.3.18 Trend Display Handling

A trend display can contain a number of data sources for which time-tagged data is presented. Time tagged data is data that have a time stamp, a status and a value. These data are drawn as a trace (the representation of one data source on the screen is called a trace) together with the traces for the other data sources.

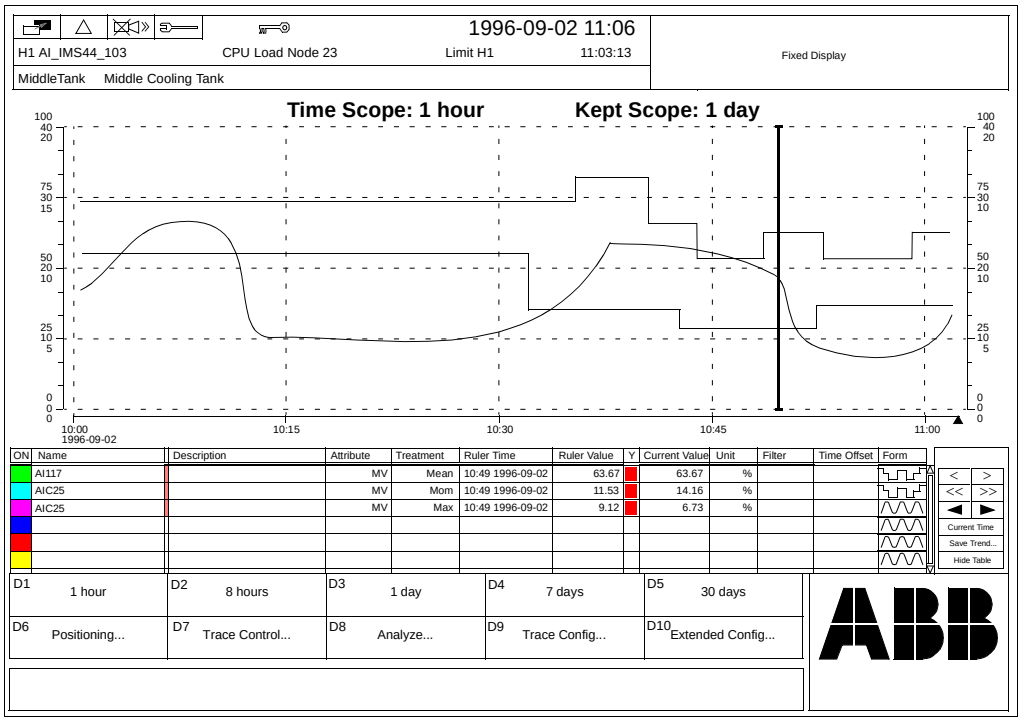


Figure 3-228. Trend display

Data displayed in a trend display can originate from either process stations (TTD based logs) or from IMS stations (History logs). Logs emanating in process stations are logs of object attributes, for example measured value MV for an AI object named AI117. Logs in history may be of different forms. They could be similar to the process station logs as when they are fed from objects or they could be of other types, for example manually entered or from some type of application program. A trend display allows traces corresponding to any set of data sources to be mixed.

Data sources can also be selected by log instead of object. In this case the data source, the log, is specified through its full name (for example TTD_30_6_4_2 or $HSAIC117,MV-1-o).

Trend data is fetched either from a process station or an IMS station as illustrated in the figure below.

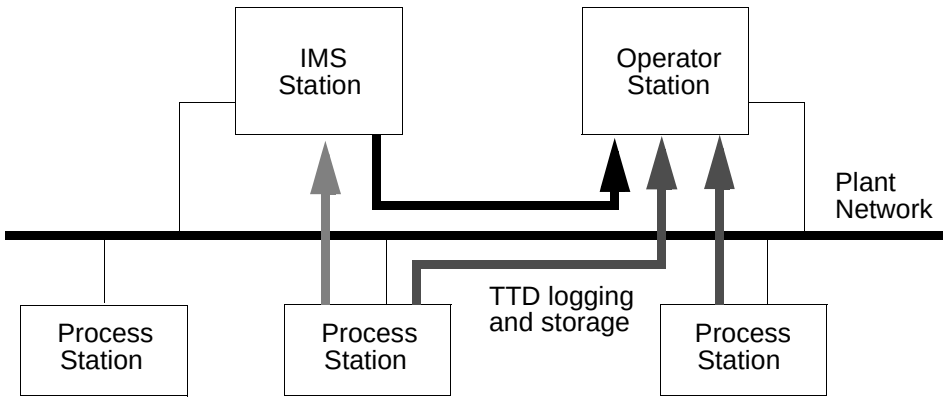


Figure 3-229. Data sources for trend data

Furthermore trend data can be reached from a process or IMS station in a network not connected through the master bus which is reachable through TCP/IP. If this is the case and the TCP/IP networking is configured then trend data is fetched through TCP/IP transparently to a user. No redundancy can be expected when TCP/IP is used, unless dual TCP/IP cables are used.

A trend display can show any number of traces on a screen but the default is six traces. The number of traces are configured in the display builder. ObjectTrend and AutoTrend always show six traces but if they are saved they become ordinary displays and can therefore be changed in the Display Builder.

A trend display must be created (configured) and installed before it can be used. The display can after this be modified and these modifications later saved (if allowed).

An **ObjectTrend** can be called up from any process object without creating a display. The user selects an object and invokes the ObjectTrend function. At this point the system creates a temporary display for the object in question. This display can be saved and then it becomes an ordinary Trend display.

An **AutoTrend** can be called up by selecting a small Trend element in a Process display without creating a display. When selecting the Trend element the system creates a temporary display for the element in question. This display can be saved and then it becomes an ordinary Trend display.

The saved ObjectTrend and AutoTrend displays ends up in the 'UserTrends' library.

NOTE

Before the trend displays can be used the Log Database needs to be set up.
A description of how this is done is included at the end of this section.

3.3.18.1 Tutorial

The following steps are described in this tutorial:

- Create a Trend Display
- Install the Trend Display
- Configure a Trace (in Run-Time)

Create a Trend Display

To create a Trend Display named TopTank and save it in the library Woodyard_B, do as follows:

1. Click on **System Config** under the item **System Display Keys** in the pop-up menu **Operation.**

   The following set of dynamic function keys is displayed at the bottom of the screen.

D1 AdvaCommand…	D2 AdvaBuild…	D3	D4	D5
D6 Settings…	D7 Station…	D8 Maintenance…	D9	D10

Figure 3-230. Dynamic function keys - System Configuration dialog

2. Press **F2** or click on the screen button D2 (AdvaBuild...).

   A new set of dynamic function keys is displayed.

D1 Display Builder	D2 Display Installer	D3 Display Transfer	D4	D5
D6 Control Config.	D7 Text Edtitor	D8	D9	D10

Figure 3-231. Dynamic function keys - AdvaBuild dialog

3. Click **D1** (Display Builder).

   The Display Builder is displayed.

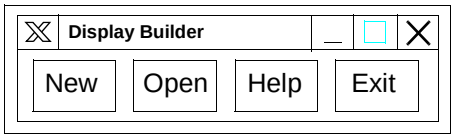


Figure 3-232. Main Display Builder box

NOTE

You can not select the Display Builder without full authorization (Max dialog).

4. Click on the **New** button.

   A dialog box with a list of templates is displayed:

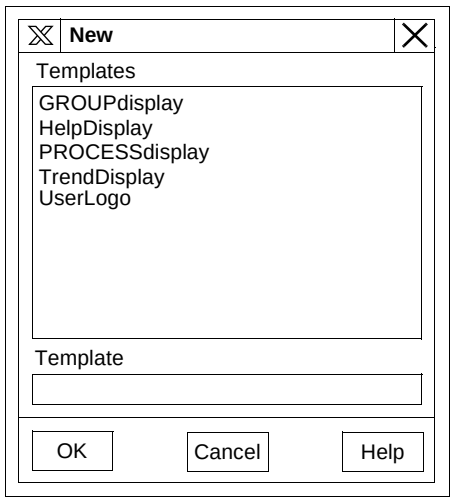


Figure 3-233. Template dialog box

5. Click on **TrendDisplay** to select the Trend Display template and then click on the **OK** button. If you double-click on the name, you do not have to click on OK.

   The Template dialog box disappears and in a few seconds, a new unnamed trend display is displayed on the screen:



Figure 3-234. New unnamed trend display

   The only properties that have to be specified when a trend display is built is the name and the library for the new display. We do not want to make any further configuration at the moment.

6. Choose **Save As** from the **File** menu in the unnamed trend display box.

   The **Save As** dialog box is displayed.

7. Select the library **Woodyard_B**, and enter the display name **TopTank** in the Display name field.

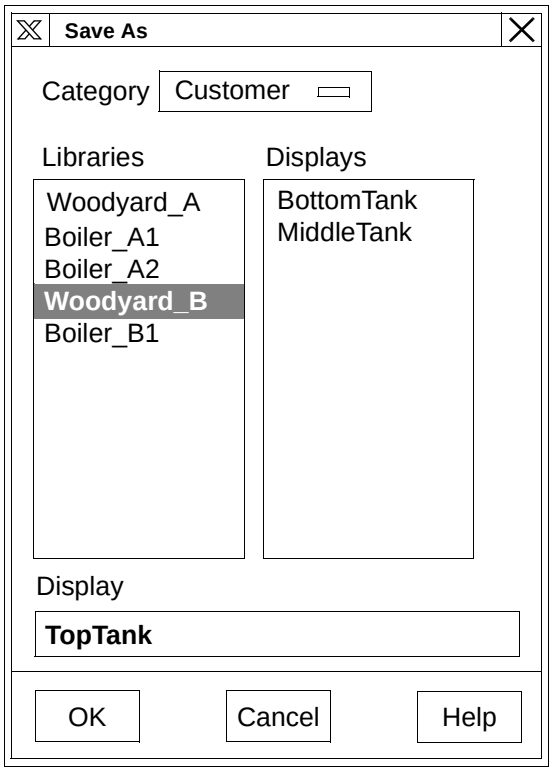


Figure 3-235. Save As dialog box

8. Click on the **OK** button.

   The Save As dialog box disappears. The display is saved. It now has to be installed before it can be presented in run-time.

Install a Trend Display

To install the new trend display, do as follows:

1. Click on **System Config** under the item **System Display Keys** in the pop-up menu **Operation.**

The following set of dynamic function keys is displayed at the bottom of the screen.

D1 AdvaCommand…	D2 AdvaBuild…	D3	D4	D5
D6 Settings…	D7 Station…	D8 Maintenance…	D9	D10

Figure 3-236. Dynamic function keys - System Configuration dialog

2. Press **F2** or click on the screen button D2 (AdvaBuild...).

   A new set of dynamic function keys is displayed.

D1 Display Builder	D2 Display Installer	D3 Display Transfer	D4	D5
D6 Control Config.	D7 Text Edtitor	D8	D9	D10

Figure 3-237. Dynamic function keys - AdvaBuild dialog

3. Press **F2** or click on the screen button D2 (Display Installer).

   The Display Installer is displayed.

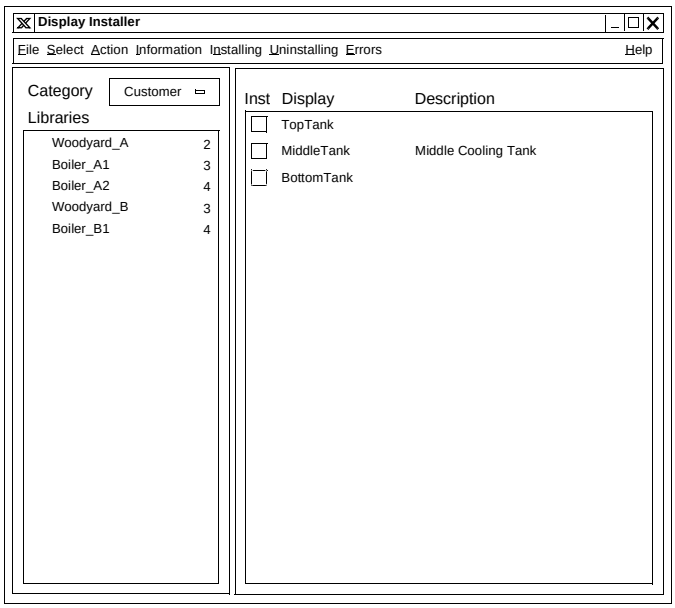


Figure 3-238. Display Installer dialog box

4. Select the library, **Woodyard_B**, in the Library list to the left.
5. Select **TopTank** in the display list, click at the name area and with the right mouse button choose the **Menu Install** item from the Install menu (which only appears when the right mouse button is pressed).

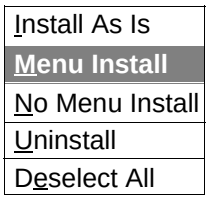


Figure 3-239. Install menu

During installation the display indicator is yellow with an hour-glass. The display indicator will be green if the display has been correctly installed. An error is indicated by a red symbol with a cross.

The empty trend display, TopTank, is now available to use and can be selected from the Display menu.

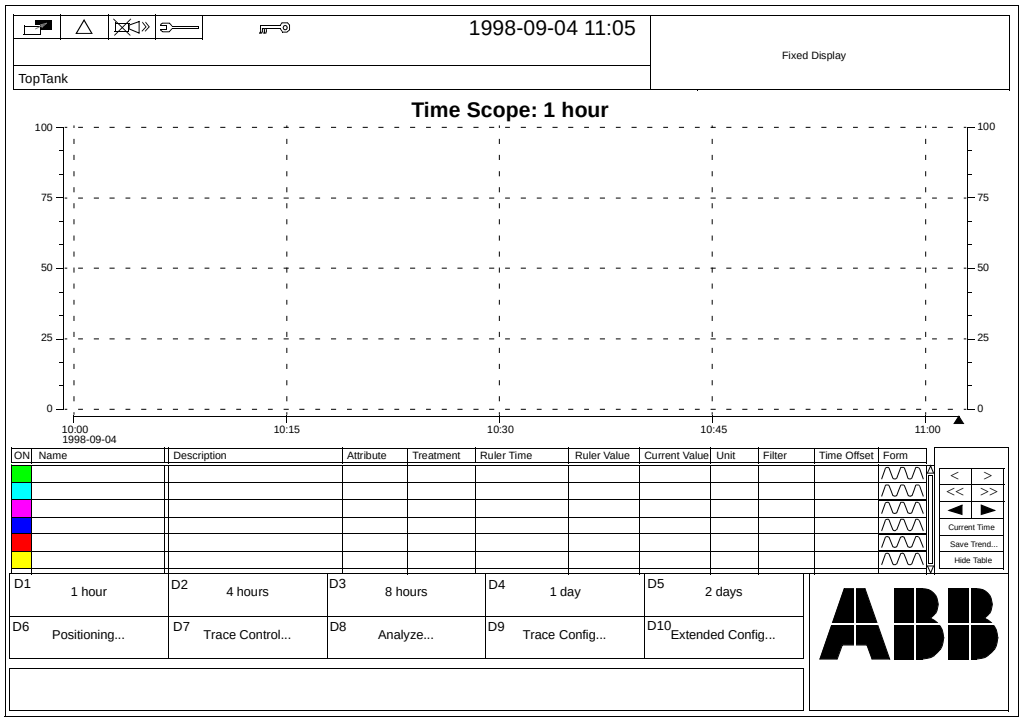


Figure 3-240. Example of a trend display

Configure a Trace (in Run-Time)

To assign an object to trace number 1 in the Trace Table of the trend display 'TopTank' (which is the same as the one selected in the first part of this tutorial) do as follows:

1. Click on the first row (trace number 1) in the Trace Table.
2. Press **F9** or click on the screen button D9 (Trace Config...) in the Base Dialog.

   The Trace Configuration dialog box is displayed.

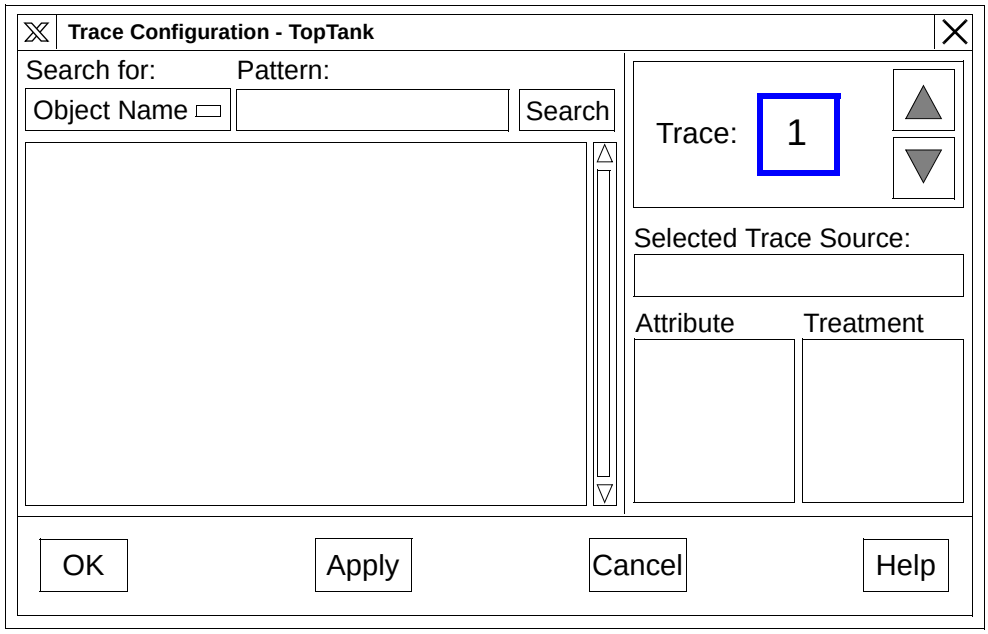


Figure 3-241. Trace Configuration dialog box

In this example we only know that object name begins with 'AIC' and that it has to do with the inlet speed of the tank. To find it we need to search for all logged object names starting with AIC.

3. Select **Object Name** in the options menu in the left part of the configuration dialog box.
4. Enter **AIC*** in the Pattern input field to the right of the options menu.

   The '*' character matches any number of characters.

5. Click on the **Search** button.

   All names which include the requested search pattern is presented in the list below the search functions.

6. The object we are looking for is AIC4 (TopTank inlet speed). Click on **AIC4** in the list and it will then be marked and selected as the trace source.

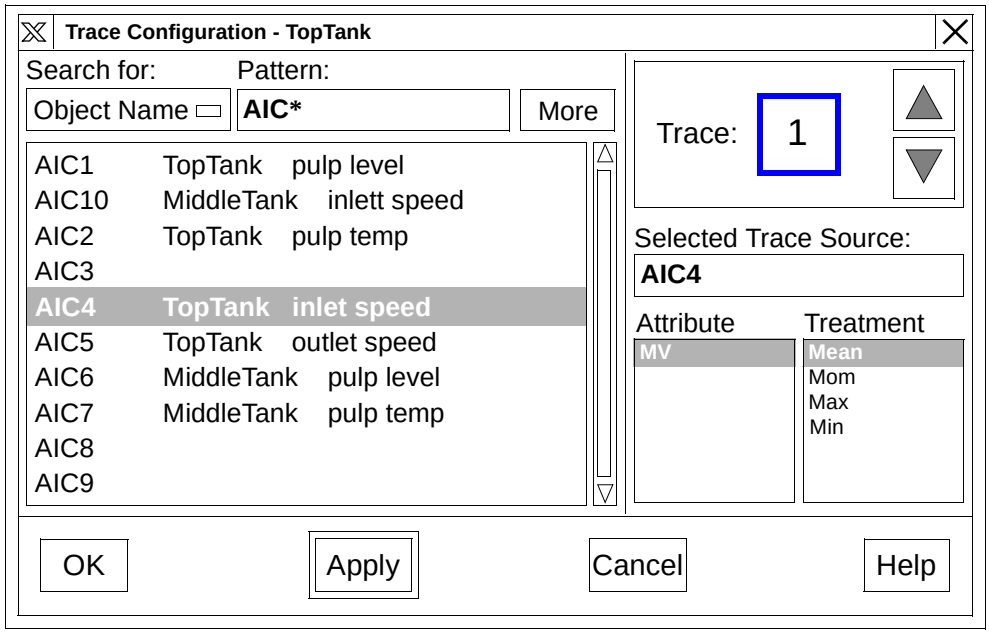


Figure 3-242. Trace Configuration dialog box efter an object selection

The selected name appears in the Selected Trace Source field to the right of the list. AIC4 has **MV** (Measured Value) and **Mean** as default Attribute and Treatment values, which means that we do not have to change them. These values are highlighted in their own lists below the Selected Trace Source input field.

7. Click on the **Apply** button.

The trace source AIC4 is now assigned to trace number 1 in the Trace Table.

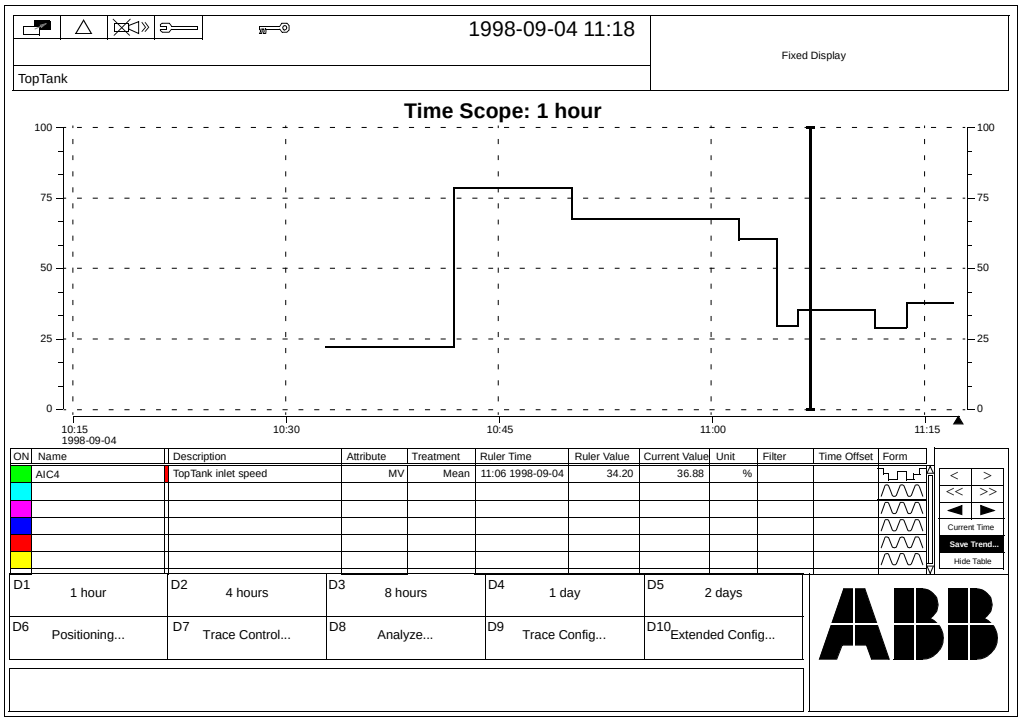


Figure 3-243. Example of a trend display

8. Click on the **OK** button to exit the Trace Configuration.

   The configuration done in the display is only temporary until the display is saved. The direct access button **Save Trend...** is highlighted to indicate that something has been configured in the display and that the display has not been saved.

9. Click on the **Save Trend...** button. The Save Trend dialog box is displayed.

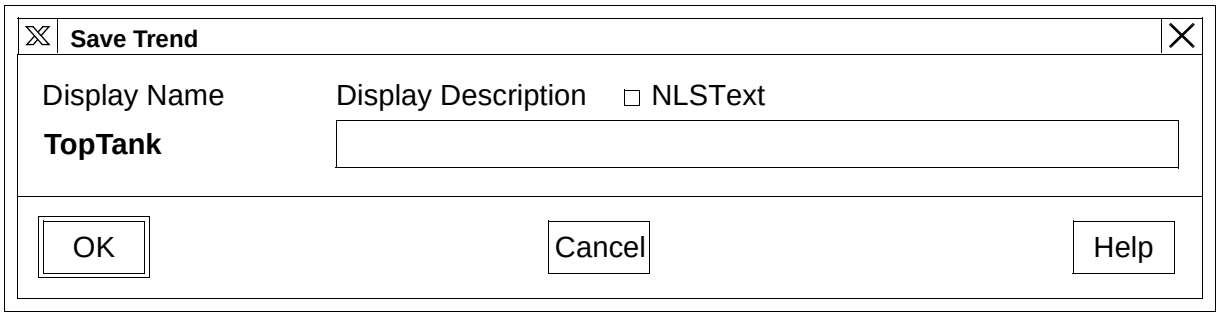


Figure 3-244. Save Trend dialog box

10. Enter a description, for example TopTank Woodyard_B, and click on the **OK** button.

    The **Save Trend...** button is not highlighted anymore which indicates that all configurations have been saved.

3.3.18.2 Creating a Trend Display

This section describes how trend displays are created in the Display Builder (for a detailed instruction about the Display Builder, see the manual *AdvaBuild Display Builder User's Guide*).

1. Click on **System Config** under the item **System Display Keys** in the pop-up menu **Operation.**

   The following set of dynamic function keys is displayed at the bottom of the screen.

D1 AdvaCommand…	D2 AdvaBuild…	D3	D4	D5
D6 Settings…	D7 Station…	D8 Maintenance…	D9	D10

Figure 3-245. Dynamic function keys - System Configuration dialog

2. Press **F2** or click on the screen button D2 (AdvaBuild...).

   A new set of dynamic function keys is displayed.

D1 Display Builder	D2 Display Installer	D3 Display Transfer	D4	D5
D6 Control Config.	D7 Text Edtitor	D8	D9	D10

Figure 3-246. Dynamic function keys - AdvaBuild dialog

3. Press **F1** or click on the screen button D1 (Display Builder).

   The main Display Builder box is displayed.

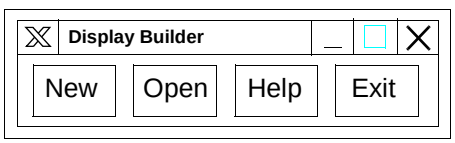


Figure 3-247. Main Display Builder box

NOTE

You can not select the Display Builder without full authorization (Max dialog).

4. Click on the **New** button.

A dialog box with a list of templates is displayed:

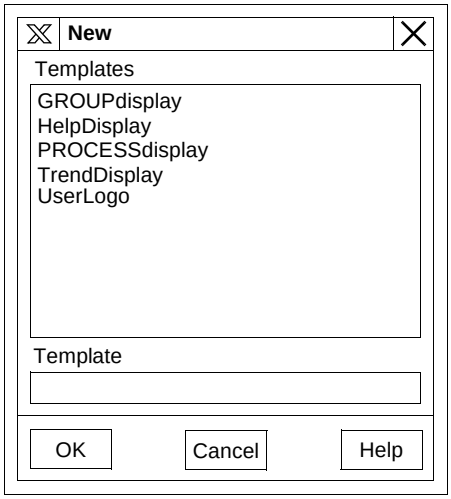


Figure 3-248. Template dialog box

5. Click on **TrendDisplay** to select the Trend Display template and then click on the **OK** button. If you double-click on the name, you do not have to click on OK.

   The Template dialog box disappears and in a few seconds, a new unnamed trend display is displayed on the screen:



Figure 3-249. New unnamed trend display

6. The only properties that have to be specified when a trend display is built is the name and the library for the new display. This is done when the display is saved. But to further configure the new display, choose **Display Attributes** from the **Tools** menu.

   The following dialog box is displayed:

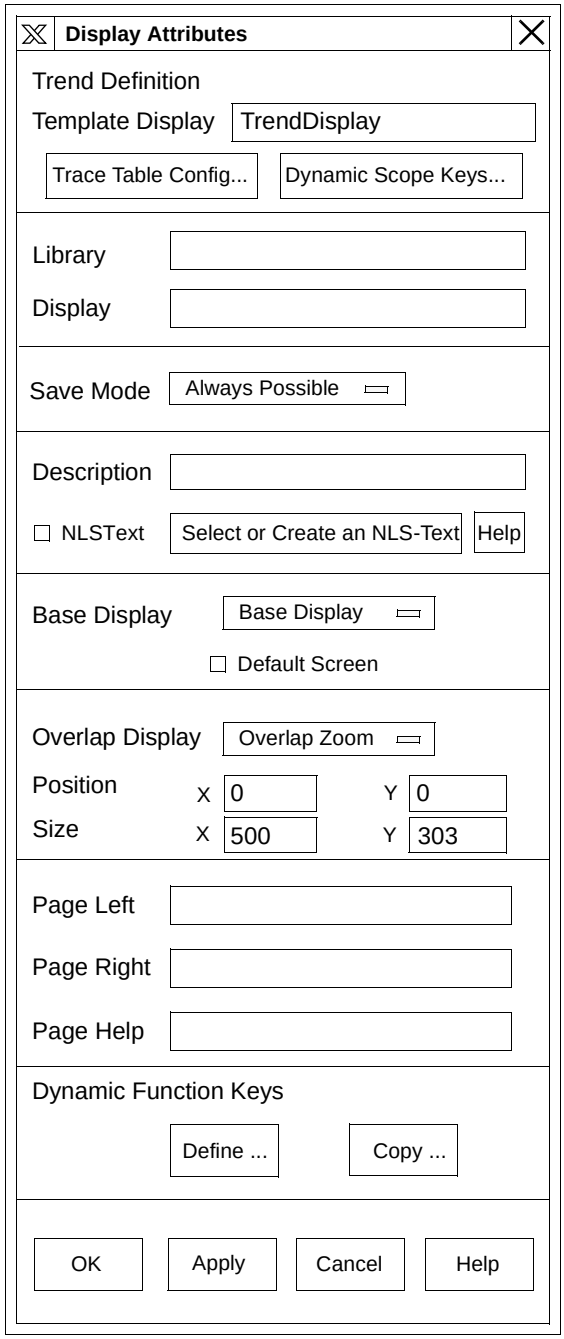


Figure 3-250. Display Attributes dialog box for trend displays

7. Click on the **Trace Table Config...** button in the Trend Definition field at the top of the Display Attribute dialog box.

   The **Trace Table Configuration** dialog box is displayed.

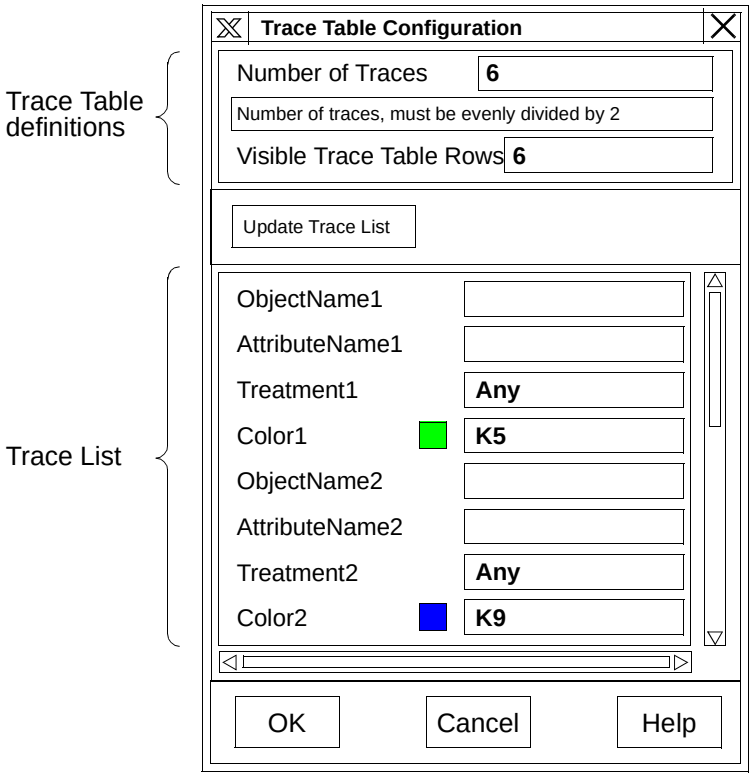


Figure 3-251. Trace Table Configuration dialog box

The number of traces possible in a trend display can be configured in this dialog as well as the number of visible traces in the Trace Table. Independent of what the user defines the numbers are rounded up to even value. If you, select to have twelve traces and to display six of these then the table (displayed in the trend display) must be scrolled to view all traces. If no specification for the number of traces and visible traces are set then six traces are used and they are all shown in the Trace Table.

8. If you have changed the value for 'Number of Traces' you must update the Trace List, that is click on the **Update Trace List** button in the Trace Table Configuration dialog box.

   The Trace List is updated with regard to the 'Number of Traces'.

   Instead of specifying a data source through an object and attribute name a data source can be specified by a log name. Log names for TTD logs are specified as 'TTD_netw_node_ logGroup_logIndex' (for example TTD_30_11_1_14). History log names are fully specified (for example $HSAIC14,VALUE-1-o).

When a time scope is set the trend display will pick the log out of those logs that contain the time scope that best fit the data request. This is done for every trace in the table. If a log name is specified instead of an object name as trace source then only data from this log will be used.

9. Enter an **Object Name** and an **Attribute** for each trace in the trend display.

   The first six traces have different default colors. If you add more traces, you have to give each new trace a color by entering the name of the color in the Trace Table Configuration dialog box. Otherwise they will all have white as default color.

   For more information about how you can change the trace color, see the subsection Extended Configuration in Section 3.3.18.4 Run-Time Configuration.

10. To save and exit the Trace Table Configuration, click on the **OK** button.

    The Trace Table Configuration dialog box disappears.

11. Click on the **Dynamic Scope Keys** button in the Display Attributes dialog box.

    A dialog box is displayed which allows scope keys for the trend display to be changed/defined.

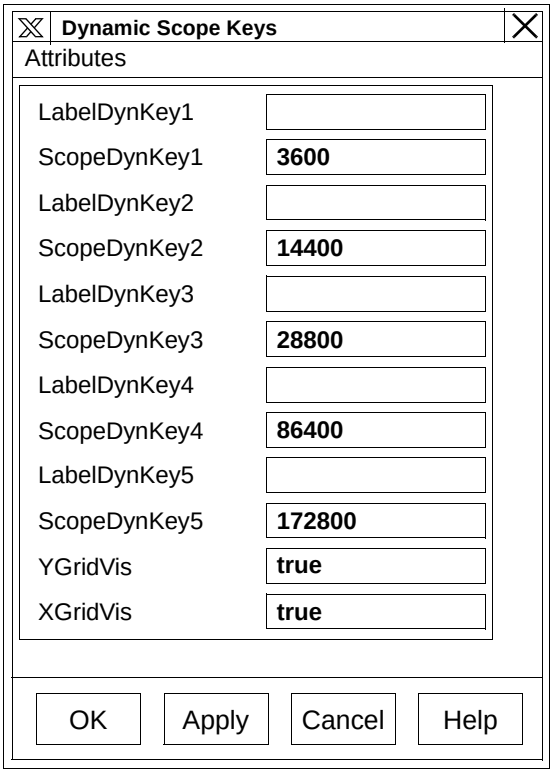


Figure 3-252. Dynamic Scope Keys dialog box

Some of these properties can be changed at run-time, some can not. Those run-time changes are done in the Trace Configuration and Extended Configuration dialog boxes.

The following attributes can be set for the scope keys of a trend display:

– **LabelDynKey1 - LabelDynKey5**

  Label strings displayed on the dynamic keys for the specified time scopes. If a LabelDynKey is left blank then it is computed from the time scope specified, that is 3600 is turned into "1 hour" (or what is appropriate in the used language).

– **ScopeDynKey1 - ScopeDynKey5**

  Time scope in seconds for the five dynamic keys used for time scope selection, for example 172800 = 2 days. Default value for the five keys are: 3600 (=1 hour), 14400 (=4 hours), 28800 (=8 hours), 86400 (=1 day), and 172800 (=2 days).

Additional attributes for the Trace Diagram are:

– **YGridVis**

  Decides whether the vertical grid lines, that is the Y grid lines, are visible (=true) or hidden (=false). Default value is 'true'.

– **XGridVis**

  Decides whether the horizontal grid lines, that is the X grid lines, are visible (=true) or hidden (=false). Default value is 'true'.

To save and exit the scope key configuration, click on the **OK** button.

12. Select **Save Mode** in the Display Attributes dialog box. The Save Mode is an attribute that controls how a trend display that is modified at run-time may be saved.

    The possible values for this attribute are:

    – **Always possible**

      The Trend display can always be saved at run-time (Default value).

    – **Possible with Key**

      An authorization key in the functional keyboard is necessary to save the Trend display at run-time.

    – **Not Possible**

      The Trend display can not be saved at run-time.

    The other fields and buttons of the Display Attributes dialog box that are common to all display configuration are described in the manual *AdvaBuild Display Builder User's Guide*.

13. To save and exit the trend display configuration, click on the button **OK** in the Display Attributes dialog box.

    The Display Attributes dialog box is closed.

14. Choose **Save As** from the **File** menu in the unnamed trend display box.

    The **Save As** dialog box is displayed.

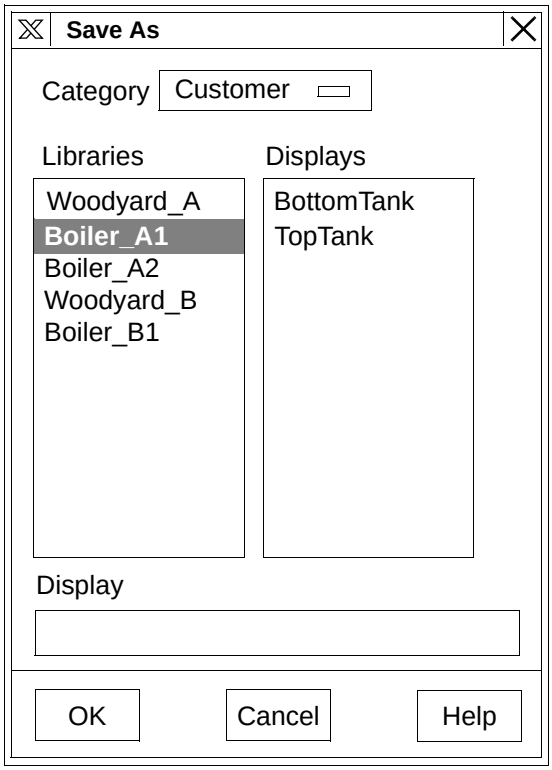


Figure 3-253. Save As dialog box

15. Select the **library** where you want to save the trend display, enter the display name in the Display name field, for example MiddleTank, and click on the **OK** button.

    The Save As dialog box disappears.

    The display is saved. It now has to be installed before it can be presented in run-time. How to install a display is described in Section 3.3.18.3 Installing Trend Displays.

16. Choose **Close** from the **File** menu in the trend display box and it disappears.

17. Click on the **Exit** button in the main Display Builder box to leave the Display Builder.

3.3.18.3 Installing Trend Displays

How a display is installed is described in the manual *AdvaBuild Display Builder User's Guide*.

1. Click on **System Config** under the item **System Display Keys** in the pop-up menu **Operation.**

   The following set of dynamic function keys is displayed at the bottom of the screen:

D1 AdvaCommand…	D2 AdvaBuild…	D3	D4	D5
D6 Settings…	D7 Station…	D8 Maintenance…	D9	D10

Figure 3-254. Dynamic function keys - System Configuration dialog

2. Press **F2** or click on the screen button D2 (AdvaBuild...).

   A new set of dynamic function keys is displayed.

D1 Display Builder	D2 Display Installer	D3 Display Transfer	D4	D5
D6 Control Config.	D7 Text Edtitor	D8	D9	D10

Figure 3-255. Dynamic function keys - AdvaBuild dialog

3. Press **F2** or click on the screen button D2 (Display Installer).

   The following dialog box is presented:

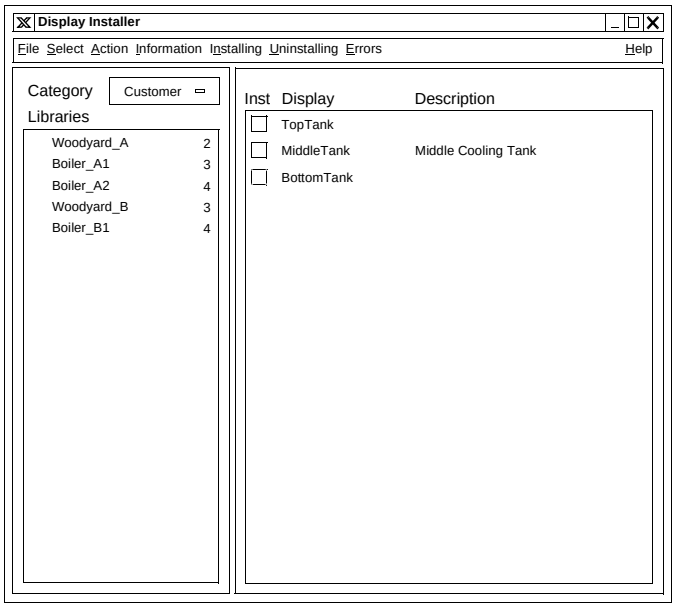


Figure 3-256. Display Installer dialog box

NOTE

Full authorization (Max dialog) is required if you want to install displays.

4. Click at the name area of the chosen display and with the right mouse button choose the **Menu Install** item from the Install menu (which only appears when the right mouse button is pressed).

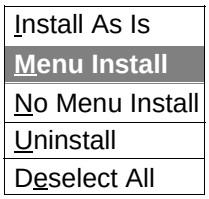


Figure 3-257. Install menu

A number of displays can be installed as follows:

a. Click the left mouse button on one display name in the Name Area and hold the mouse button down while dragging the mouse in the Display Area.

b. Choose **Install** in the **Action** menu of the Menu Bar.

An overlapping dialog box is presented.

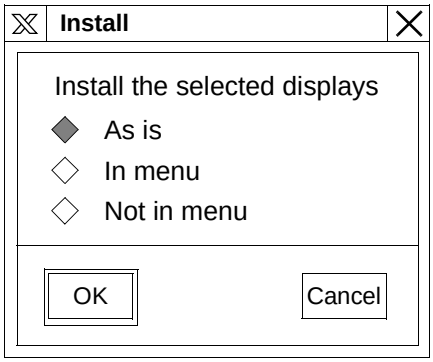


Figure 3-258. Install dialog box

5. Click on the **OK** button to start the installation. The overlapping dialog box disappears.

The display indicator shows the current status of each display. A display is correctly installed when the indicator is green. The symbol could be different depending on different status. During installation the display indicator is yellow with an hour-glass. An error is indicated by a red symbol with a cross.

The trend display is now available to use and can be selected from the Display Menu.

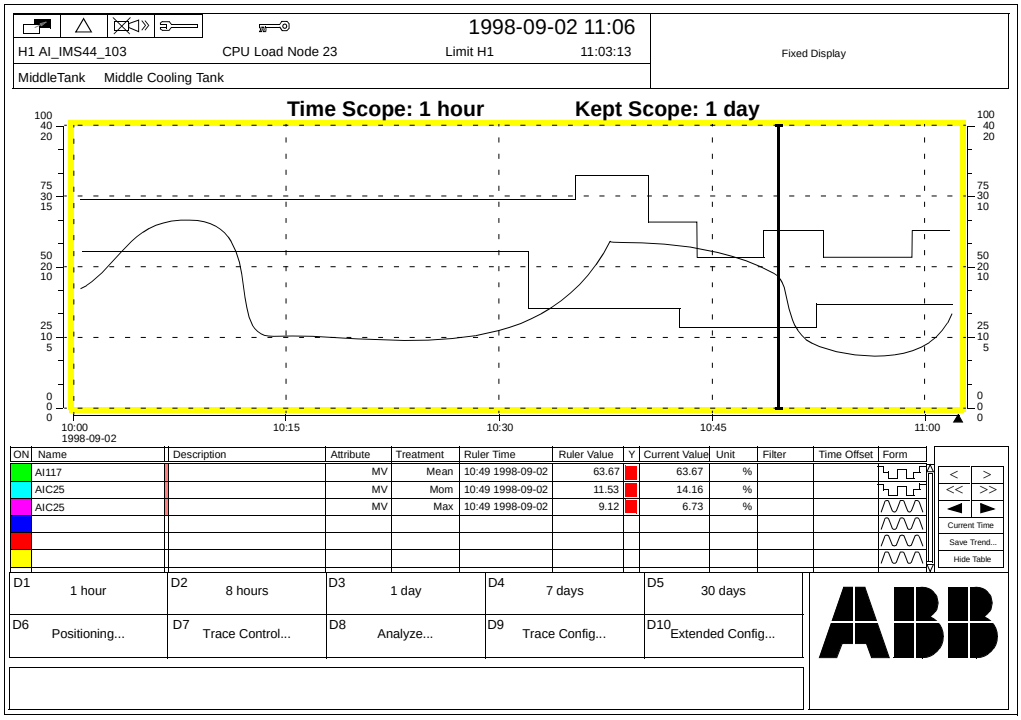


Figure 3-259. Example of a trend display

6. Choose **Exit** in the **File** menu to close the Display Installer dialog box.

3.3.18.4 Run-Time Configuration

In Trace Configuration you can specify the sources of the traces. If the object or log is unknown you can search for names/descriptions with the search aid in the upper left part of the configuration dialog box.

To be able to configure traces in a trend display the Trace Table must be maximized. If the table is minimized, press the direct access button **Show Table**.

Trace Configuration

The first step is to bring up the Trace Configuration dialog box.

1. Select a trace in the Trace Table, for example '2'.

   The second row (trace no 2) is highlighted by a white frame.

2. Press **F9** or click on the screen button D9 (Trace Config...) in the Base Dialog.

   The Trace Configuration dialog box is displayed.

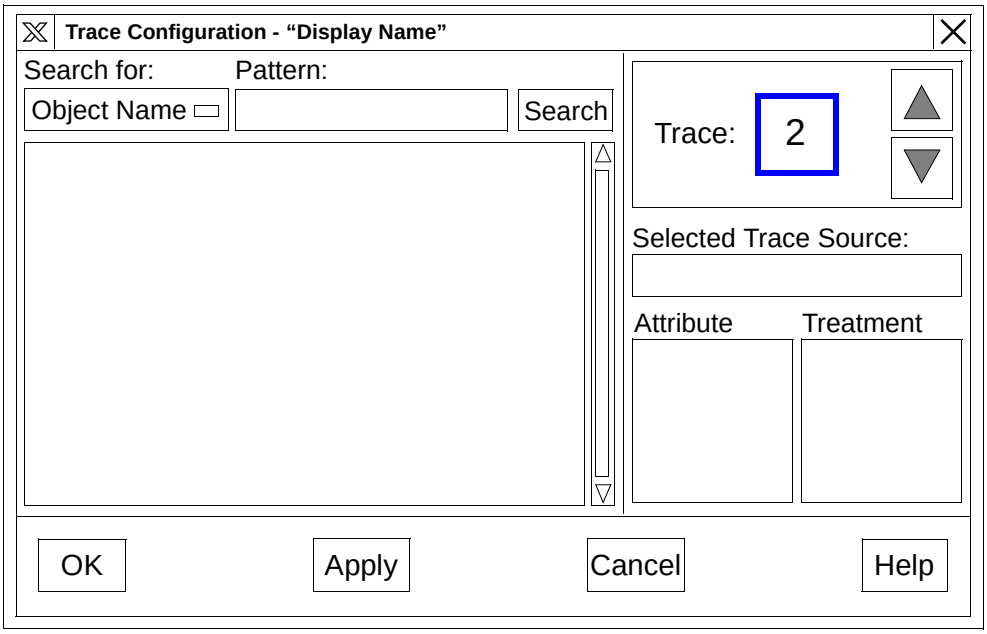


Figure 3-260. Trace Configuration dialog box for trace table

All configuration done in the Trace Configuration will take effect when you click on either the **Apply** or the **OK** button. The **OK** button will close the box as well.

NOTE

If you want the changes to be permanent, you have to save the display before you leave it. This is done with the direct access button **Save Trend...** in the display.

The **Save Trend...** button is highlighted as long as the trace configuration changes have not been saved. **If you change the display without a save, all your configuration changes are lost.**

Search for Name/Description

In the options menu in the left part of the configuration dialog box you can select between three search modes:

- Object Name (for example: AIC4)
- Object Description (for example: Water level)
- Log Name (for example: TTD_30_6_7_4)

Do as follows:

1. Select a search mode in the options menu (for example Object Name).
2. Enter a pattern in the Pattern input field to the right of the options menu (for example 'AIC*', which you use when you want to list all logged object names starting with 'AIC').
3. Click on the **Search** button.

   All names/descriptions which include the requested search pattern will be presented in the list below the search functions.

   If the request finds more than 50 matches to the pattern, the **Search** button changes into a **More** button. Click on the More button to request more names/descriptions or refine the search pattern and click on the Search button again.

Search Patterns

You may enter a pattern using some special characters '*' and '?' and the search aid will show all matches. The '*' character matches any number of characters and the '?' matches one character.

Example:

Enter **AOC***. All objects with logged attributes starting their names with AOC are listed.

The search function can also be used to search for object names through scopes.

Example:

- to find all objects starting with an A in network 31 and node 24 you specify the string 'A*[31,24]'.
- to find all objects in network 41 containing the string 'CUR' you specify the pattern '*CUR*[41,*]'.
- to list all objects with scoping you specify the string '*[*,*]'.

NOTE

One limitation on scope handling does exist: the trend system does not hold any information about where IMS objects are located so these are included in all scope matches where they could possibly be.

Select Object/Log

1. Select one of the objects by clicking on the row in the list.

   The selected object appears in the Selected Trace Source field to the right of the list. Every trace source has default Attribute and Treatment values (log function), which are highlighted in their own lists below the Selected Trace Source input field.

   For a log a pseudo attribute '(log)' is displayed and for an asynchronous log a name '(object)'. Default selection for attribute will always be the first one presented, for treatment it will be Mean. If the specified object is not logged then an error message is displayed.

2. If you want to select another attribute and/or treatment value click on the corresponding item in the list.

   The log functions/treatments supported by the system are:

   – Mean
   – Mom (Momentary)
   – Max
   – Min
   – Sum
   – Sum of squares
   – Standard deviation

Select Trace Number

To select the trace row you want to assign the trace source to, you may use the up/down arrow buttons in the upper right part of the configuration dialog box. You can also select a new trace number by clicking on the Trace Table row.

Select Trace Source

If you already know the exact object or log name of the trace source, just enter the name in the Selected Trace Source input field and click on the **Apply** or the **OK** button.

Apply

To apply a configuration, click on the **Apply** button.

The trace source is assigned to the selected trace row. Repeat the procedure for all other traces you want to assign a source.

Cancel

To cancel a configuration, click on the **Cancel** button. **Cancel** will also close the dialog box.

Help

To bring up the help dialog box click on the **Help** button. This brings up the Help dialog box.

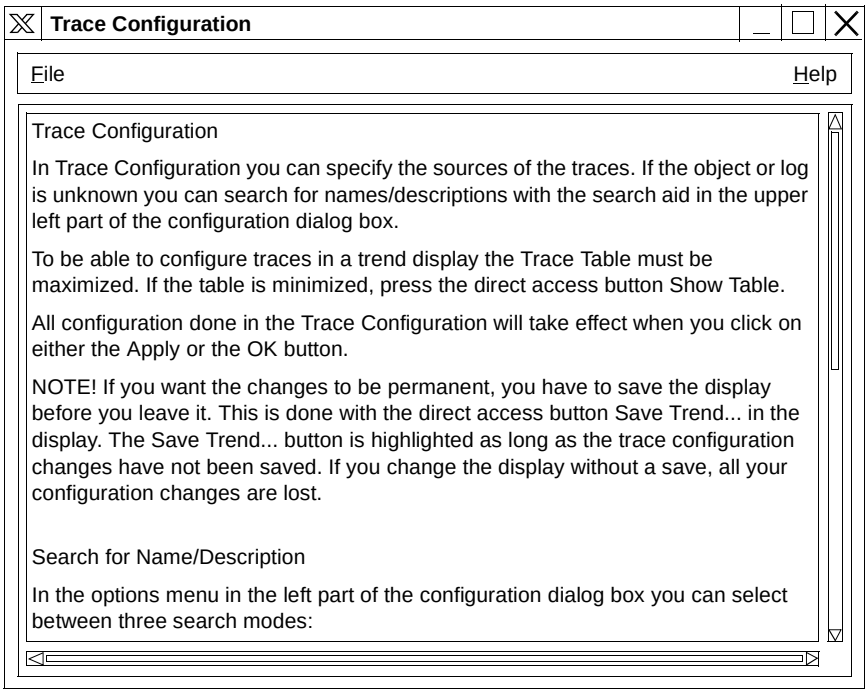

Trace Configuration
File
Help
Trace Configuration
In Trace Configuration you can specify the sources of the traces. If the object or log is unknown you can search for names/descriptions with the search aid in the upper left part of the configuration dialog box.
To be able to configure traces in a trend display the Trace Table must be maximized. If the table is minimized, press the direct access button Show Table.
All configuration done in the Trace Configuration will take effect when you click on either the Apply or the OK button.
NOTE! If you want the changes to be permanent, you have to save the display before you leave it. This is done with the direct access button Save Trend... in the display. The Save Trend... button is highlighted as long as the trace configuration changes have not been saved. If you change the display without a save, all your configuration changes are lost.
Search for Name/Description
In the options menu in the left part of the configuration dialog box you can select between three search modes:

Figure 3-261. Help dialog box

Exit Trace Configuration

To exit Trace Configuration, click on the **OK** or the **Cancel** button.

Extended Configuration

In Extended Configuration you can specify the trace colors and configure some display parameters in the trend display (Log separators in the Trace Diagram and the Average column in the Trace Table).

Do as follows to bring up the Extended Configuration dialog box:

- Press **F10** or click on the screen button D10 (Extended Config...) in the Base Dialog.

  The Extended Configuration dialog box is displayed.

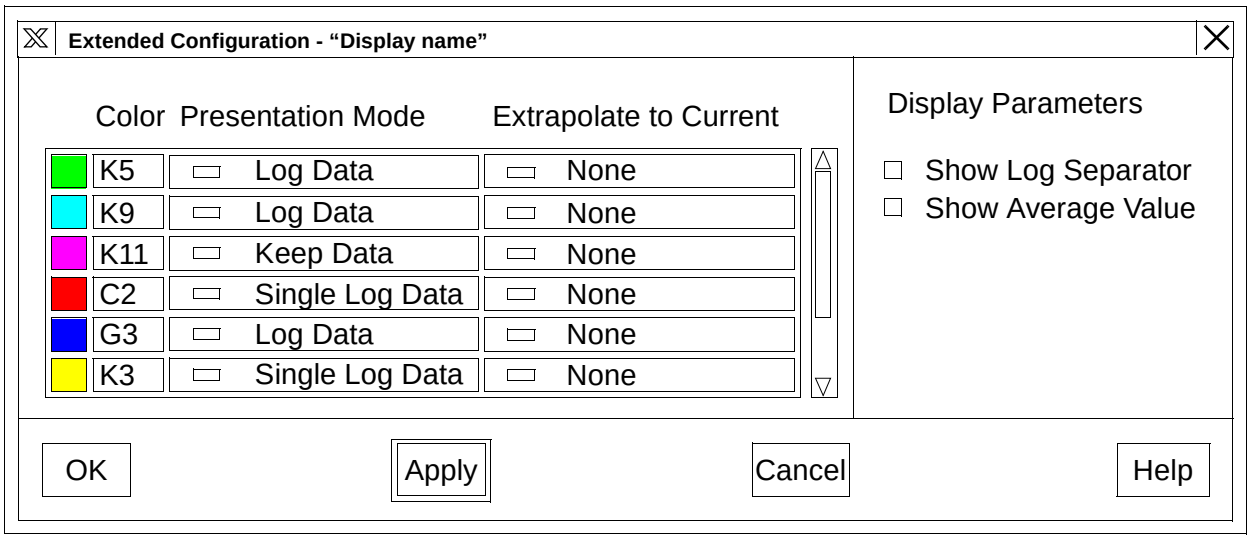


Figure 3-262. Extended Configuration dialog box

All configuration done in the Extended Configuration will take effect when you click on either the **Apply** or the **OK** button. **OK** will close the dialog box as well.

NOTE

If you want the changes to be permanent, you have to save the display before you leave it. This is done with the direct access button **Save Trend...** in the display.

The **Save Trend...** button is highlighted as long as the trace configuration changes have not been saved. **If you change the display without a save, all your configuration changes are lost.**

Change Trace Color

The color of a trace is specified by a letter/number combination, for example F16. Only capital letters are allowed.

If you do not know the letter/number of the color, you can take a hardcopy of the complete Colors Palette in the Display Builder and use it as a help. It contains the letter/number for all available colors.

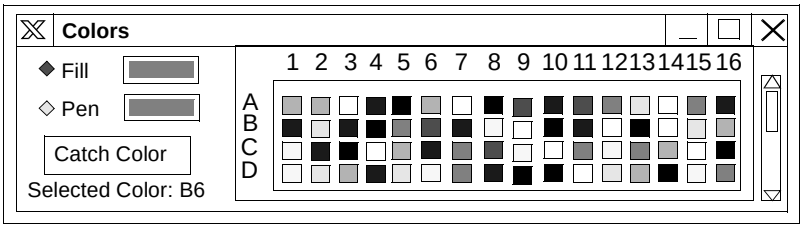


Figure 3-263. Colors palette (not complete)

To change a trace color in the Extended Configuration dialog box do as follows:

1. Click in the Color input field for the trace.
2. Enter the letter/number of the new color, and press the **<Return>** key.

   When you specify a new trace color the square to the left of the input field will change to this color. In this way you can try out different colors before you finally decide which one to use.
3. Repeat the previous steps for all other trace colors you want to change.
4. Click on the **Apply** button.

   All color changes are applied to the traces.

Select Presentation Mode

The presentation mode is specified by the options in the options menu. This mode describes how log data are selected and retained with reference to a trace.

To change presentation mode for a trace do as follows:

1. Click on the corresponding option menu button and select one of the options.

   This mode (parameter) can have the following options:

   – **Log Data**

     This mode will redraw the trace each time the zoom factor is changed as well as periodically to make sure that what is on the screen is consistent with what would be displayed if the display is redisplayed or displayed on another node. Log data is the default option.

   – **Keep Data**

     This mode makes the Trace Diagram retain all data when changing zoom scale etc.

   – **Single Log Data**

     This mode makes the trace source to be only one log, that is the trace presented in the Trace Diagram is actually made out of only one log as source.

2. Repeat the previous steps for all other trace log data selections (presentation modes) you want to change.
3. Click on the **Apply** button.

   All presentation mode changes are applied to the traces.

Extrapolate to Current

This setting will give you the opportunity to see logs that are out of scope.

- **None** (Default)
- **Horizontal**

  This setting will extrapolate a line from the last stored time to the current time.

- **Tangential**

  This setting will draw a line from the last stored time up to the current time that is the tangent to the last stored data.

Show/Hide Log Separators

The display parameter Show Log Separators defines whether log separators should be visible or not in the Trace Diagram.

The log separator display parameter controls if an I-beam should be displayed at the point where two logs are joined or not. Log separator indications are drawn as I-beam as is illustrated below. When a trace is using data from two separate logs, for example a primary log and several secondary logs, then an I-beam is drawn to indicate the change.

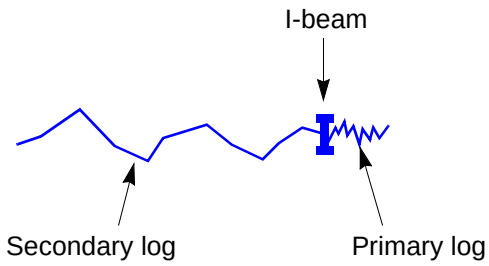


Figure 3-264. Log separator indication

To activate/deactivate the log separators click on the **Show Log Separators** button.
A pressed button indicates an activated log separator.

Show/Hide Average Values

The display parameter Show Average Values defines whether the Average column should be visible or not in the Trace Table.

To activate/deactivate the average column click on the **Show Average Values** button.
A pressed button indicates that the Average column is visible.

OK

To apply a configuration and close the dialog box, click on the **OK** button.

Apply

To apply a configuration, click on the **Apply** button.

Cancel

To cancel a configuration and close the dialog box, click on the **Cancel** button.

Help

To bring up the help dialog box click on the **Help** button. This brings up the Help dialog box.

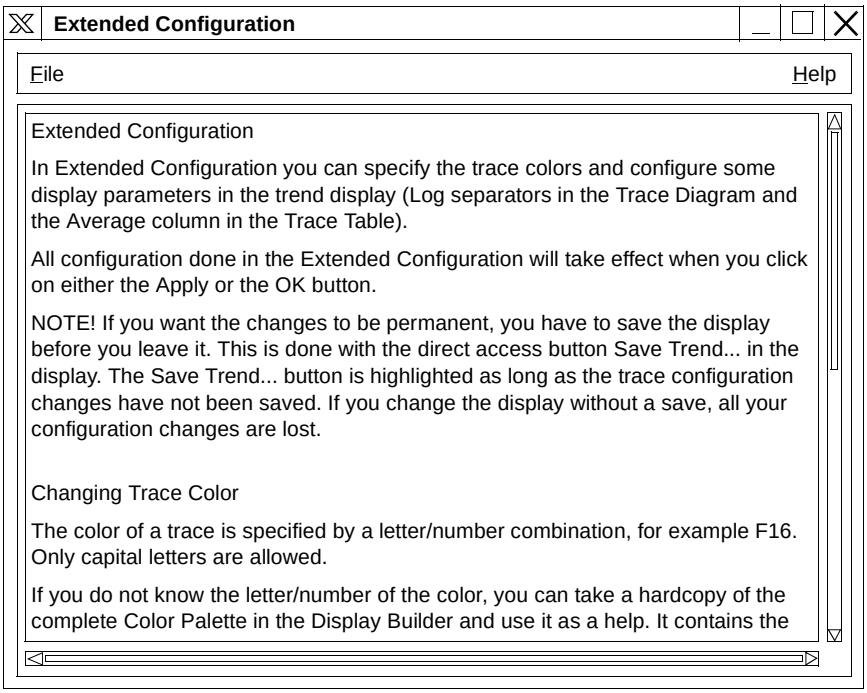

Extended Configuration
File
Help
Extended Configuration
In Extended Configuration you can specify the trace colors and configure some display parameters in the trend display (Log separators in the Trace Diagram and the Average column in the Trace Table).
All configuration done in the Extended Configuration will take effect when you click on either the Apply or the OK button.
NOTE! If you want the changes to be permanent, you have to save the display before you leave it. This is done with the direct access button Save Trend... in the display. The Save Trend... button is highlighted as long as the trace configuration changes have not been saved. If you change the display without a save, all your configuration changes are lost.
Changing Trace Color
The color of a trace is specified by a letter/number combination, for example F16. Only capital letters are allowed.
If you do not know the letter/number of the color, you can take a hardcopy of the complete Color Palette in the Display Builder and use it as a help. It contains the

Figure 3-265. Help dialog box

Exit Extended Configuration

To exit Extened Configuration, click on the **OK** or **Cancel** button.

3.3.18.5 Trend Displays

A trend display contains a **Trace Diagram** with traces and a **Trace Table** with information about the data sources displayed in the Trace Diagram.

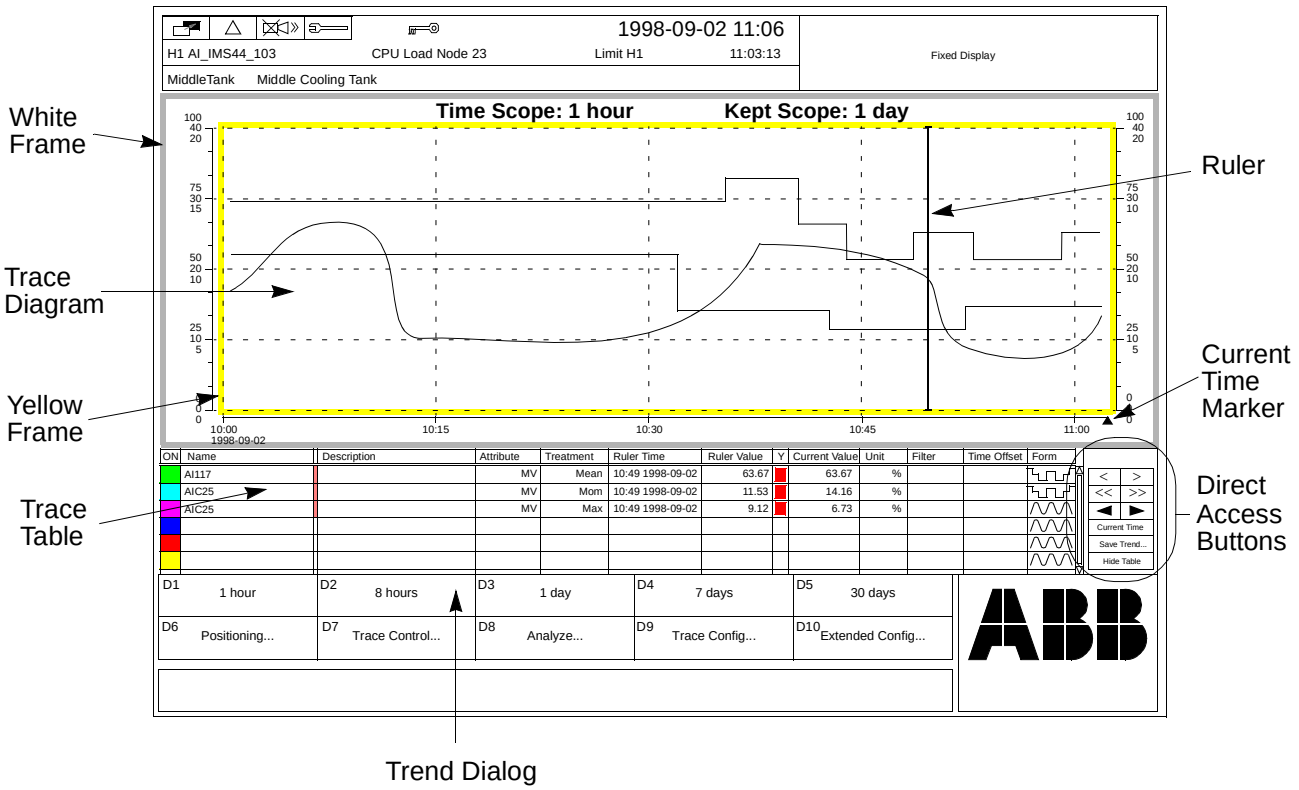


Figure 3-266. Trend display

The **Direct Access Buttons** to the right of the Trace Table are not visible when the table is hidden.

The **Trend Dialog** give access to three subdialogs and two dialog boxes to change the configuration. The subdialogs are Positioning, Trace Control and Analyze.

Normally the trend display shows the time scope with the current time to the right. The current time is indicated by a small triangle on the time axis of the trend display. When the current time mark, moves on then the trend display automatically scrolls its window to show the new time.

The white frame indicates that it is this trend display that the trend dialog is connected to.

When you start to change (pan or zoom) the viewed time scope, the trend display enters a not updated mode. The mode is indicated by a **yellow frame** around the drawing area within the Trace Diagram. When current time is selected again (Current Time button) the selected time scope is preserved. The surrounding yellow frame disappears.

Trace Diagram

The trend display contains a Trace Diagram which can show any number of traces in the drawing area. The recommended number of traces (as well as the default) are six traces as it becomes hard to distinguish more traces and the performance goes down.

The Trace Diagram consist of a drawing area containing the traces, a value (Y) axis, a (X) time axis and some headline texts.

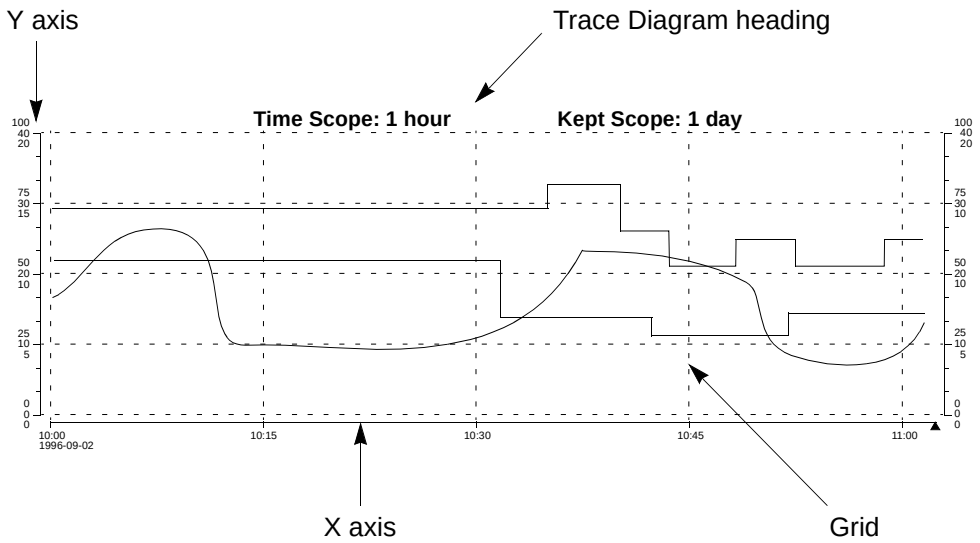


Figure 3-267. Trace diagram

Trace Diagram heading

The Trace Diagram contains the currently selected time scope. This time scope is shown in the Trace Diagram heading. The time scope is presented as, for example '16 days 2 hours'. All time scopes presented are truncated down to two units (that is '16 days 2 hours 4 min 3 sec' is never presented).

If a global time scope is saved (Keep Scope function) then this time scope is also displayed in the header area to the right of the first heading.

Y axis (Value axis)

The Y axis for the traces are either drawn with one color per trace, or all traces on the Y axis are drawn the same, in one color (the same grey color as the axis itself). When the Y-values differs between the traces, then each trace Y-values are drawn, but if the Y-values are equal they are drawn/presented in grey.

For information about how to change the Y max and/or the min values in a trend display on a screen (but not in the data base in the process station), see Section 3.3.18.6 Trace Control.

X axis (Time axis)

The date is printed below the time of the first major tick (to the left) on the time axis and at each tick where the date is changed.

Grid

Grid lines will be displayed for each major tick on the X and Y axis depending on the configuration done in the Display Builder (see Figure 3-252 on page 234).

Trace Table

The Trace Table contains information about the data sources represented by the traces displayed in the Trace Diagram.

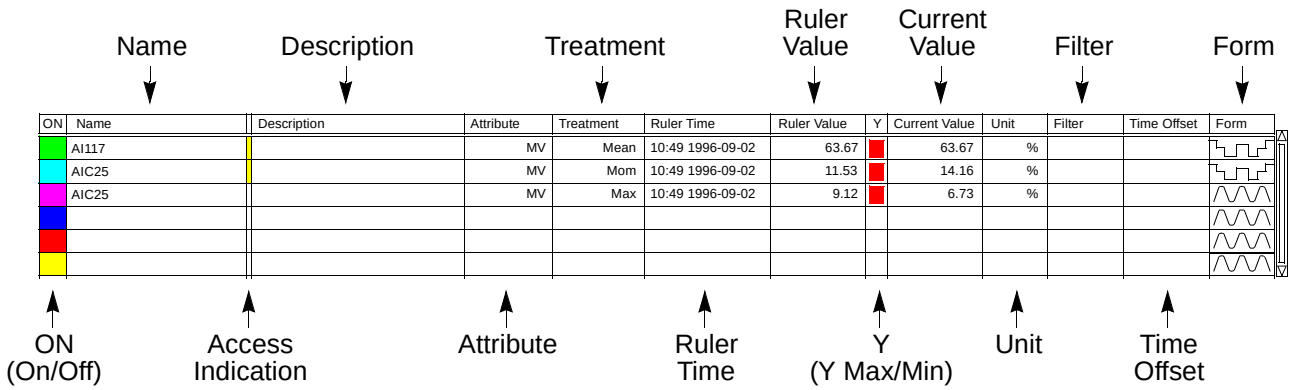


Figure 3-268. Trace table (without the Average column)

The Trace Table columns are described below. All options specified in the table are saved when the display is saved.

ON (On/Off)

This is a toggle button to hide or show the trace in the Trace Diagram. The symbol indicates if the trace is shown or hidden. When the trace is visible then the rectangle is filled with the same color as the trace, when the trace is not visible it is a unfilled rectangle. The toggle button can either be operated directly in that table or through the Hide/Show Trace button in the Trace Control dialog.

Name

Contains the object or log name for the trace. If any of the fields Y, Filter, Time Offset are highlighted and the table is hidden, then the highlights are transferred to the object field so it is no doubt that something has been done to the trace.

Access Indication

This field is used as an indication showing that trace data is requeseted from a process station or IMS. This indication is flashing yellow during the request. If a request fails then the indication turns red, for example the indication also goes red if the specified object is not logged.

Description

Contains the description of the object or log.

Attribute

Contains the name of the used object attribute, for example Measured Value (MV). Logs or specialized objects such as asynchronous logs in the IMS does not show an attribute as the log is the object itself.

The attribute can be changed in run-time (see Section 3.3.18.4 Run-Time Configuration). Only those attributes which are logged for the actual object can be selected.

Treatment

This field shows the log function selected for the log, that is how the log is calculated before it is stored in the process station or the IMS. The log functions/treatments supported by the system are:

- Mean
- Mom (Momentary)
- Max
- Min
- Sum
- Sum of squares
- Standard deviation

The treatment can be changed in run-time. Note that the different type of logs must have been created to use the different treatments.

Ruler Time

Ruler time is the time of the data point below or closest to the left of the ruler as it is placed in a position on the screen, that is the ruler time presented in the column is equal or less than the time where the ruler is placed.

If a trace does not have any data points at a certain time point then the ruler time in the table is displayed as '***' to indicate this. If some traces are moved according to some delay factor (Time Offset) then the time presented in the table takes this into account.

Ruler Value

This field displays the value of the data point corresponding to the ruler time displayed. If no ruler time can be found from the ruler the field is left blank. If a bad data point is corresponding to the ruler time the field displays '***' otherwise a numeric value is displayed.

Original data point value(s) are shown in the field even if the trace displayed is filtered.

Y (Y Max/Min)

This field indicates that the Y Max or Y Min has been changed compared with the configured value, that is the configuration done in the process station. If the field is invisible it means that the shown values on the axis originate from the process station configuration, that is the presented Y Max or Y Min values have not been changed in the Trend display.

For information about how to change Y Max/Y Min, see Section 3.3.18.6 Trace Control.

Average

The average column contains a computed average of the data displayed in the Trace Diagram for each trace.

NOTE

This column is configurable and is only visible when you have selected the display parameter **Show Average Values** in the Extended Configuration dialog box.

Current Value

This field displays the last value received for a log. The value is close to current value but may be late according to the setup of the log. If the data comes from a log in the IMS the blocking rate can be quite confusing.

Unit

Contains the unit type of the displayed value.

Filter

The field contains the filter factor used to filter the trace. If this field is set then the background is highlighted to indicate that the trace does not show original data values. Filter factor can be between 0 and 1, that is greater than 0 and less than 1.

For information about how to change the filter factor, see Section 3.3.18.6 Trace Control.

Time Offset

Each trace can have a time offset, making it to be drawn as a trace that is ahead or behind the time drawn on the axis. When a trace have a time offset then it is presented in the table with a highlighted background to indicate that the trace in the diagram does not correspond to the axis text.

For more information about Time Offset, see Section 3.3.18.6 Trace Control.

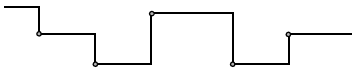
Form

A trace can be drawn using four different forms, the forms are:

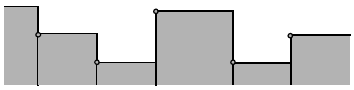
- Linear



- Rectangular



- Histogram



- Point



The form is selected by clicking on the form symbol in the table. Clicking here will bring up a menu allowing the user to select the desired form.

Direct Access Buttons

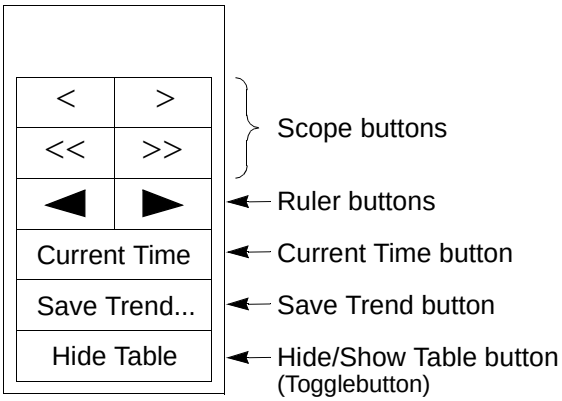


Figure 3-269. Direct access buttons

Scope buttons

The Scope buttons will pan the Trace Diagram 20 respectively 80% in the indicated directions. <, > pan 20% and <<, >> pan 80%. During panning the Trace Diagram is not updated, which is indicated with a yellow frame. To update the diagram just click on the direct access button **Current Time**, then it will continuously update again.

Ruler buttons

The Ruler buttons move the ruler in the indicated direction. If the ruler is not present it will appear in the middle of the Trace Diagram.

Current Time button

Clicking on the **Current Time** button will update the Trace Diagram. The Trace Diagram is not updated during panning and zooming.

Save Trend button

As soon as anything that can be saved in the trend display is changed (compared to the last saving) the **Save Trend...** button will be highlighted with a light grey background color.

Clicking on the **Save Trend** button will bring up a Save Trend dialog box where display name and description can be entered (display name only for ObjectTrend and AutoTrend displays).

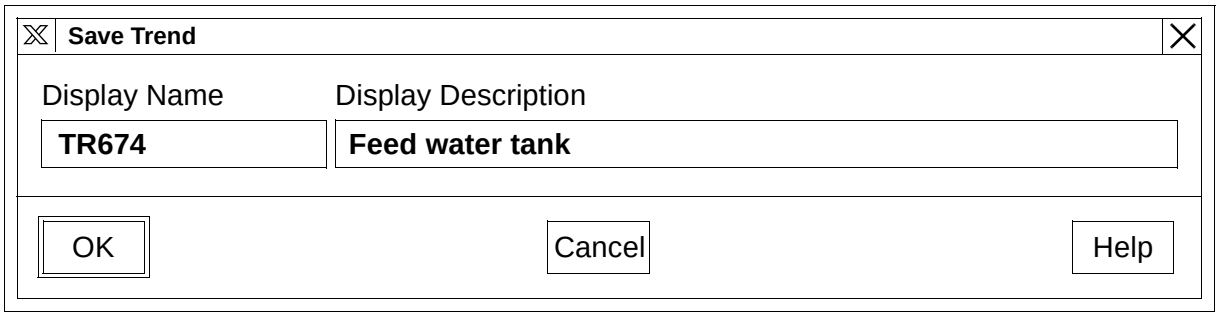


Figure 3-270. Save Trend dialog box

The **Save Trend** function saves all configuration presented in the Trace Table and configuration dialog boxes. The description of the display can also be changed when the display is saved.

The following data is stored at save display:

- Display Description
- Objects or Log Names
- Attributes
- Treatments
- Y Max/Min Settings
- Filter Factors
- Time Offsets
- Trace Colors
- Presentation Modes
- Extrapolate to Current Modes
- Log Separator Setting
- Average Setting
- Selected Time Scope.

Hide/Show Table button

The Trace Table can be hidden by activating the **Hide Table** button. When activated, the table will only show the name of the object or log that is displayed in the Trace Diagram. This is called hiding the table and this maximizes the screen area available for the Trace Diagram. This is illustrated in the figure below.

NOTE

It is only possible to configure in the Trend display if the Trace Table is visible, that is you can not change the Trend display as long as the Trace Table is minimized.

The button acts like a toggle button. The button label is **Hide Table** when the table is shown and **Show Table**, when the table is hidden. By clicking on the **Show Table** button, the Trace Table will show all data again.

If any of the fields Y, Filter, Time Offset are highlighted and the table is hidden, then the highlights are transferred to the Name field so it is no doubt that something has been done to the trace.

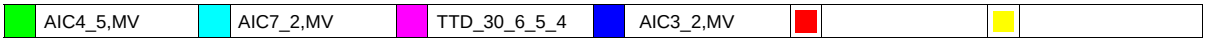


Figure 3-271. Minimized trace table

Trend Dialog

When a trend display is started it can behave in two ways. If the display have references to other displays then these references are shown on the dynamic function keys (the trend display dialog is not shown). If the display has no references then the trend dialog is shown, when the trend display is selected (click with the mouse). The ObjectTrend dialog is always shown as all other selected object dialogs.

When the trend dialog is not visible directly, you have to click anywhere within the trend display to enter the trend dialog.

When a trend dialog is active a white border is shown around the trend display. The starting dialog, that is the Base Dialog, contains buttons to change time scope, go to sub-dialogs or to bring up configuration dialog boxes (see also Figure 3-274).

D1 1 hour	D2 4 hours	D3 8 hours	D4 1 day	D5 2 days
D6 Positioning...	D7 Trace Control...	D8 Analyze...	D9 Trace Config...	D10 Extended Config...

Figure 3-272. Dynamic function keys - Base dialog

There exists three sub-dialogs and two dialog boxes to change the configuration. The sub-dialogs are Positioning, Trace Control and Analyze all described below (see Figure 3-275, Figure 3-276 and Figure 3-277). There are several shortcuts in the system. The short cuts are described together with the functions below.

Functions to move the time scope (pan) and the ruler exists also as push buttons directly in the display. All push buttons in the display are short cuts (direct access buttons) that do not change the current dialog level.

If you select **Dialog Exit** under the item **System Display Keys** in the pop-up menu **Operation** or if you activate some other dialog the trend dialog and the white frame disappears. Neither the

time scope selected nor the zoom setting or anything else is modified when a new dialog is entered. This allows the operator to bring up different trend displays (in overlap windows) to compare these and switch between the dialogs of these different displays.

The **Previous Dialog Level** button in the dialog box **Operation Keys** has the same functionality as the D5 Base Dialog screen buttons available in Positioning, Trace Control and Analyze sub-dialogs.

The **Next Dialog Block** button in the dialog box **Operation Keys** will traverse between those sub-dialogs.

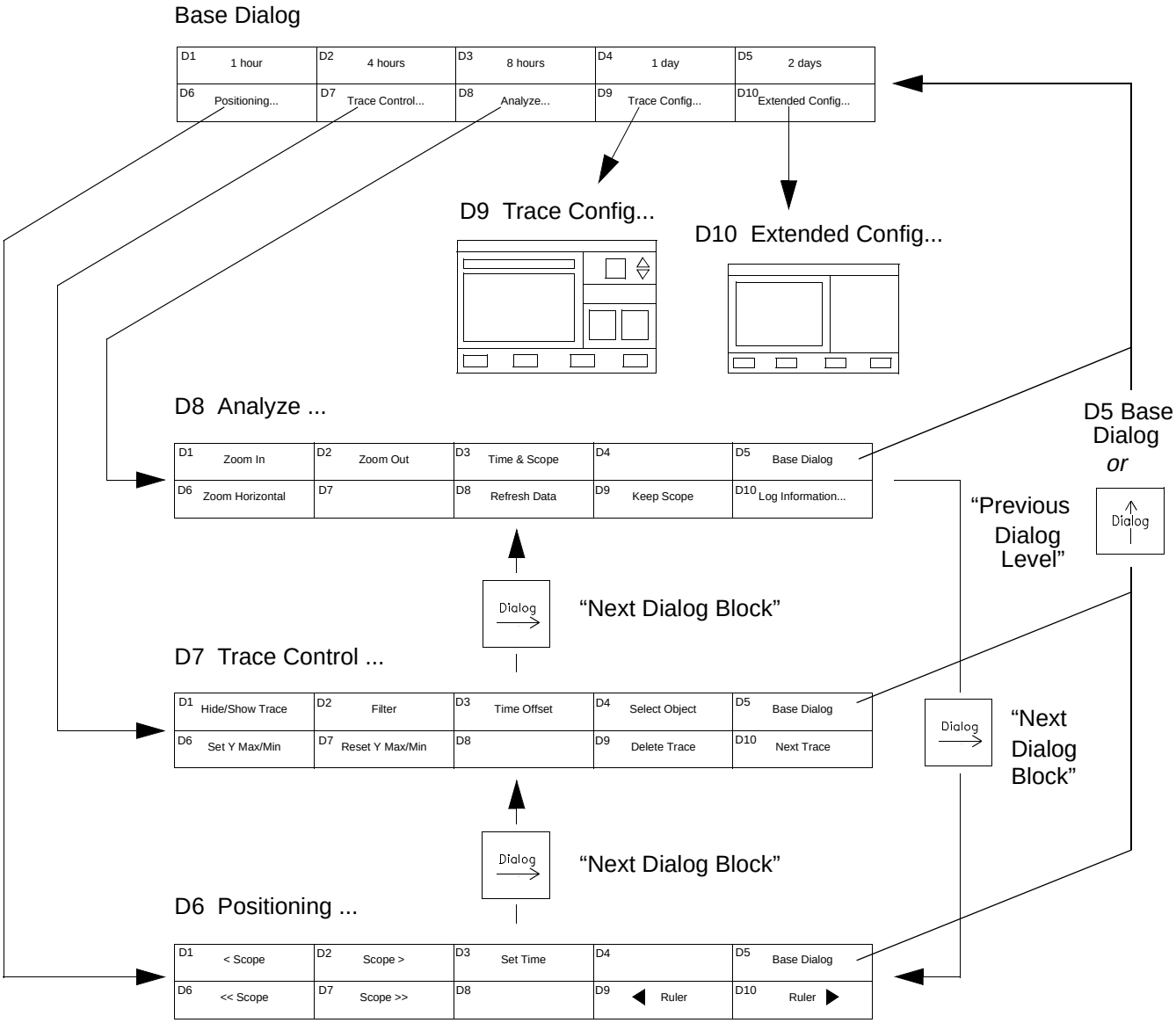


Figure 3-273. Dialog structure for Trend, ObjectTrend and AutoTrend

Descriptions of the dynamic key sets for each group follow.

Base Dialog

D1 1 hour	D2 8 hours	D3 1 day	D4 7 days	D5 30 days
D6 Positioning...	D7 Trace Control...	D8 Analyze...	D9 Trace Config...	D10 Extended Config...

Figure 3-274. Dynamic function keys - Base dialog

D1	1 hour	Give a time scope of 1 hour (=Default value) *Can be changed in configuration.*
D2	4 hours	Give a time scope of 4 hours (=Default value) *Can be changed in configuration.*
D3	8 hours	Give a time scope of 8 hours (=Default value) *Can be changed in configuration.*
D4	1 day	Give a time scope of 1 day (=Default value) *Can be changed in configuration.*
D5	2 days	Give a time scope of 2 days (=Default value) *Can be changed in configuration.*
D6	Positioning...	Bring up the sub-dialog Positioning
D7	Trace Control...	Bring up the sub-dialog Trace Control
D8	Analyze...	Bring up the sub-dialog Analyze
D9	Trace Config...	Bring up the Trace Configuration dialog box
D10	Extended Config...	Bring up the Extended Configuration dialog box

D6 Positioning...

D1 < Scope	D2 Scope >	D3 Set Time	D4	D5 Base Dialog
D6 << Scope	D7 Scope >>	D8	D9 ◀ Ruler	D10 Ruler ▶

Figure 3-275. Dynamic function keys - Positioning dialog

D1	< Scope	Move the time scope 20% backwards in time
D2	Scope >	Move the time scope 20% forward in time
D3	Set Time	Bring up the Set Time input field
D5	Base Dialog	Bring up the Base Dialog

D6	<< Scope	Move the time scope 80% backwards in time
D7	Scope >>	Move the time scope 80% forward in time
D9	◀ Ruler	Move the Ruler one step (log value) to the left
D10	Ruler ▶	Move the Ruler one step (log value) to the right

D7 Trace Control…

D1 Hide/Show Trace	D2 Filter	D3 Time Offset	D4 Select Object	D5 Base Dialog
D6 Set Y Max/Min	D7 Reset Y Max/Min	D8	D9 Delete Trace	D10 Next Trace

Figure 3-276. Dynamic function keys - Trace Control dialog

D1	Hide/Show Trace	Hide/Show the trace (Toggle button)
D2	Filter	Reduce the noice on the traces
D3	Time Offset	Add a time offset
D4	Select Object	Bring up the small object display
D5	Base Dialog	Bring up the Base Dialog
D6	Set Y Max/Min	Specify the Y Max/Min range
D7	Reset Y Max/Min	Reset the Y Max/Min range
D9	Delete Trace	Remove the selected trace
D10	Next Trace	Move the selection to next trace in the Trace Table

D8 Analyze…

D1 Zoom In	D2 Zoom Out	D3 Time & Scope	D4	D5 Base Dialog
D6 Zoom Horizontal	D7	D8 Refresh Data	D9 Keep Scope	D10 Log Information...

Figure 3-277. Dynamic function keys - Analyze dialog

D1	Zoom In	Reduce the time scope with 20%
D2	Zoom Out	Expand the time scope with 25%
D3	Time & Scope	Show a specified time and range in the Trace Diagram
D5	Base Dialog	Bring up the Base Dialog
D6	Zoom Horizontal	Make the selected time scope (selected by the pointer) to fill the whole time scope

D8	Refresh Data	Refresh Data requests for better, more data compacted logs
D9	Keep Scope	Make it possible to keep and use a scope that is good, for example for analyze purposes
D10	Log Information...	Bring up the Log Information dialog box

3.3.18.6 Trace Control

D1 Hide/Show Trace	D2 Filter	D3 Time Offset	D4 Select Object	D5 Base Dialog
D6 Set Y Max/Min	D7 Reset Y Max/Min	D8	D9 Delete Trace	D10 Next Trace

Figure 3-278. Dynamic function keys - Trace Control dialog

Hide/Show Trace

This toggle button is used to hide or show the trace depending on the state of the trace and button. It acts in the same way as the screen button ON in the Trace Table. When the trace is visible the label on the screen button is **Hide Trace** and then when the button is pressed the trace is hidden and the label on the button is changed to **Show Trace**.

Filter

The trace filtering is used to reduce noise on the traces displayed in the Trace Diagram. This noise reduction is done in the presentation only and does not affect the actual trace data stored (which is true for all parts of the trend function).

To use the function click on the **Filter** button to select the filter desired parameter. When the Filter function is activated an input field is displayed. Enter the value and press **<Return>**. Only values between 0 and 1 is allowed. Zero and no value specifies that no filtering is desired. The closer the value comes to 1 the more points are averaged for each value presented.

Time Offset

It is possible to add a time offset to a trace to displace this trace relative to the time axis of the Trace Diagram. This could be useful when you want to build a display that allows a dependent trace (maybe the same trace) to be displayed easily. For example, you may want to display a trace twice in a trend display and add a time offset of one day to the second to be able to compare today's operation with yesterdays.

If a time offset is added to a trace then this field is highlighted to indicate that you should not trust the values read from the diagram as the time offset has to be added to use the values. Zero or no value turns Time Offset off.

When the Time Offset function is activated an input field is presented.

The time offset can be set by:

- Specifying the desired time offset (+/-) in the input field.
- Specifying the time offset by dragging the pointer in the Trace Diagram.

When **Time Offset** is activated then the pointer can be used to indicate how much to offset a trace by pressing the pointer at a reference point and then drag it the amount desired for time offset.

Select Object

This function brings up the process dialog for the object. If no trace (object) is selected in the Trace Table the **Select Object** button is dimmed.

Base Dialog

This changes the dialog back to the top level, that is the Base Dialog. This functionality is the same as the **Previous Dialog Level** button in the dialog box **Operation Keys** has.

Set Y Max/Min

These function allows the Y-scale to be set for the particular trend display and trace. If a trend display does not specify its own Y Max/Min values then the trend system will first ask the object for its specification of Y Max/Min, if the object does not have a range specified then the first log source is checked and all logs are examined until one returns a range. If neither log nor the object have a Y Max/Min specification the 100/0 is used as default.

When the **Set Y Max/Min** screen button is pressed the dialog will prompt for the Y values, which then can be entered.

To set the Y-scale for a trace in a trend display (but not in the process station data base) do as follows:

1. Press **F6** or click on the screen button D6 (Set Y Max/Min).

   Two input fields appears at the bottom of the screen. The first input field, Y Max, is automatically selected.

2. Enter a new value in the **Y Max** input field, press **<Return>**, enter a new value in the **Y Min** input field, and press **<Return>**.

   The two input fields disappears.

Reset Y Max/Min

This function removes the Y Max/Min range specified in the display and retains the ranges specified by the object (or logs) in the data base in the process station.

Delete Trace

This function removes the selected trace from the Trace Table and the Trace Diagram.

Next Trace

This function moves the trace focus (selection) in the Trace Table. If no trace is selected, then it is assumed that the first trace is wanted. Repeatedly clicks on this button moves the selection downwards in the table and if needed the table is auto-scrolled, that is the selected trace is always visible.

3.3.18.7 Changing the Time Scope

The time scope is the time period shown in the Trace Diagram. The time scope can be changed by using the different scope buttons or through the functions in the Analyze dialog.

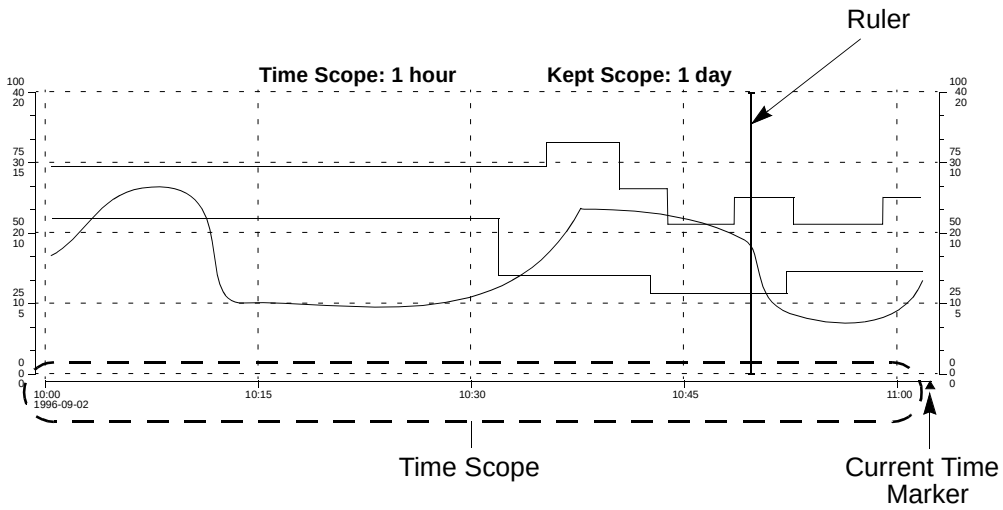


Figure 3-279. Trace diagram with 1 hour time scope

You can move the time scope by pressing the user configured dynamic keys in the Base Dialog or the Scope and Ruler buttons in the Positioning dialog. The arrow indications on the Scope and Ruler buttons tells in which direction the time scope is moved and two arrows '>>' indicates that a larger move is used for the Scope buttons.

D1 1 hour	D2 4 hours	D3 8 hours	D4 1 day	D5 2 days
D6 Positioning	D7 Trace Control...	D8 Analyze...	D9 Trace Config...	D10 Ext. Config...

Figure 3-280. Dynamic function keys - Base dialog

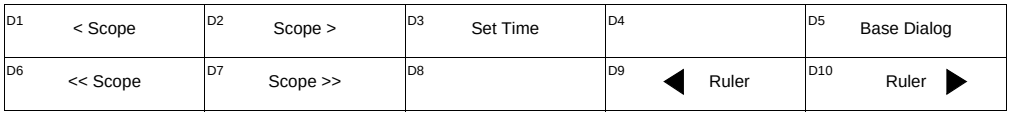


Figure 3-281. Dynamic function keys - Positioning dialog

You can also use the direct access buttons for the scope and ruler functions independent of the dialog level selected.

Scope

< Scope	Move the time scope 20% backwards in time
Scope >	Move the time scope 20% forward in time
<< Scope	Move the time scope 80% backwards in time
Scope >>	Move the time scope 80% forward in time

Ruler

The ruler is displayed after you click or drag the pointer in the Trace Diagram. Whenever the ruler is displayed, the ruler time and ruler values are shown in the Trace Table.

The different ways the ruler can be moved are:

- By using the pointer device
- By using the dynamic keys
- By using the direct access buttons in the display
- By using the arrow keys on the keyboard after clicking in the Trace Diagram.

If a key or a button is pressed that affects the ruler, the ruler is moved according to the direction arrow on the dynamic key (or button).

When you move the ruler outside of the current time scope, the time scope is moved to show the ruler (this is called auto-scroll). If any of the ruler functions is invoked when the ruler is not shown then the ruler is assumed to be in the middle of the Trace Diagram and it will be displayed after the operation.

The ruler time for the different traces in the Trace Table can be different, either because the logs are sampling and storing data at different intervals or because a time offset has been added to some of the traces.

Set Time

With this function you can see the scope at a specific date and time. The time entered will always occur in the middle of the Trace Diagram.

To set the time do as follows:

1. Press **F3** or click on the screen button D3 (Set Time).

   An input field with the current date and time appear at the bottom of the screen.

2. Enter a new value in the **Time** input field and press **<Enter>**.

   The input field disappear and the time scope of the Trace Diagram is changed to the requested time, which will be presented in the middle of the Trace diagram.

3.3.18.8 Analyze Functions

To enlarge or reduce the time scope used in the Trace Diagram you can use the zoom functions. These functions will change the X axis in such a way that a better resolution is achieved (no new data is fetched). The functions Zoom In and Zoom Out changes the scope around the ruler (the middle of the screen is used as a reference point if the ruler is not displayed).

D1 Zoom In	D2 Zoom Out	D3 Time & Scope	D4	D5 Base Dialog
D6 Zoom Horizontal	D7	D8 Refresh Data	D9 Keep Scope	D10 Log Information...

Figure 3-282. Dynamic function keys - Analyze dialog

The different analyze functions are:

Zoom In	Reduce the time scope with 20%
Zoom Out	Expand the time scope with 25%
Zoom Horizontal	Make the selected time scope (selected by the pointer) to fill the whole time scope
Time & Scope	Shows a specified time and range in the Trace Diagram
Refresh Data	Refresh Data requests for better, more data compacted logs
Keep Scope	Makes it possible to keep and use a scope that is good, for example for analyze purposes

Zoom In

To reduce the time scope, press the **Zoom In** button.

You can zoom in until the time scope is less than 30 seconds. Normally, no new data is fetched when zooming in (this only happens if some portion of the X axis gets shown which has not already been shown). To get more data, press the **Refresh Data** button.

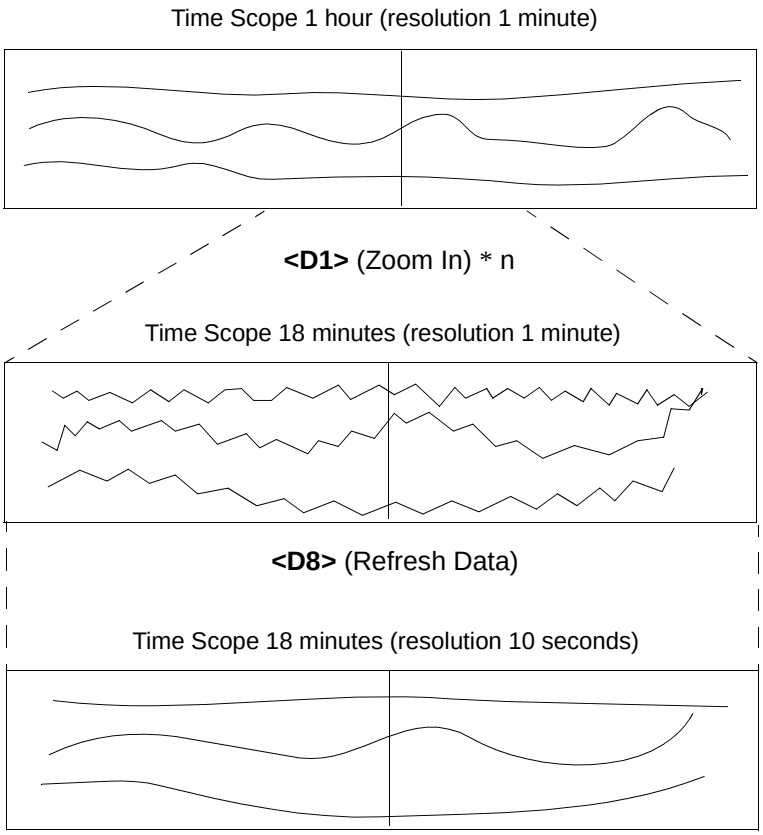

Time Scope 1 hour (resolution 1 minute)
<D1> (Zoom In) * n
Time Scope 18 minutes (resolution 1 minute)
<D8> (Refresh Data)
Time Scope 18 minutes (resolution 10 seconds)

Figure 3-283. A number of zoom in followed by refresh data

Zoom Out

To expand the time scope, press the **Zoom Out** button.

Zoom Out shows more data but does not fetch any new data unless a new part of the time scope becomes exposed. Pressing the **Refresh Data** button in this case have no effect.

Time & Scope

To specify a complete scope you can use the Time & Scope function. This function allows a specified time and a scope to be shown.

To specify a scope do as follows:

1. Press the **Time & Scope** button.

   Two input fields appears at the bottom of the screen. The value in the first input field, is equal to the time value in the middle of the X axis.

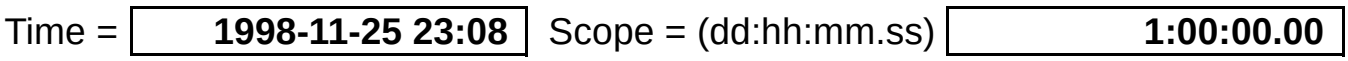


Figure 3-284. Time & Scope input fields

2. Enter a new value in the **Time** input field and/or press **<Enter>**.
3. Enter a new value in the next input field, **Scope**, and press **<Enter>**.

   The two input fields disappears and the specified time scope is displayed in the Trace Diagram.

After zooming it is possible to use the scope function etc to change the current scope as usual. If better data is wanted then the **Refresh Data** button can be used. To go back to the continuous time scope function, click on the **Current Time** direct access button in the display.

Zoom Horizontal

When Zoom Horizontal is activated (by pressing the **Zoom Horizontal** screen button) the pointer stops being used to position the ruler and instead is used to select the scope (that the Trace Diagram should show instead of the previous scope). The pointer is pressed at one edge of the interesting scope and dragged to the other end (if the pointer is moved over the edge of the Trace Diagram then it is auto-scrolled). The letting go of the pointer initiates the zoom operation.

Zoom Horizontal can also be controlled by the cursor keys by first positioning the ruler and then initiate the Zoom Horizontal and move the zoom bar (the other end of the zoom scope) and press **<Return>** when the desired scope is selected.

Zoom Horizontal can also be invoked without selecting the Analyze dialog level. This is done by pressing the **control** (<**Ctrl**>) and **shift** key at the same time as the pointer is dragged in the Trace Diagram.

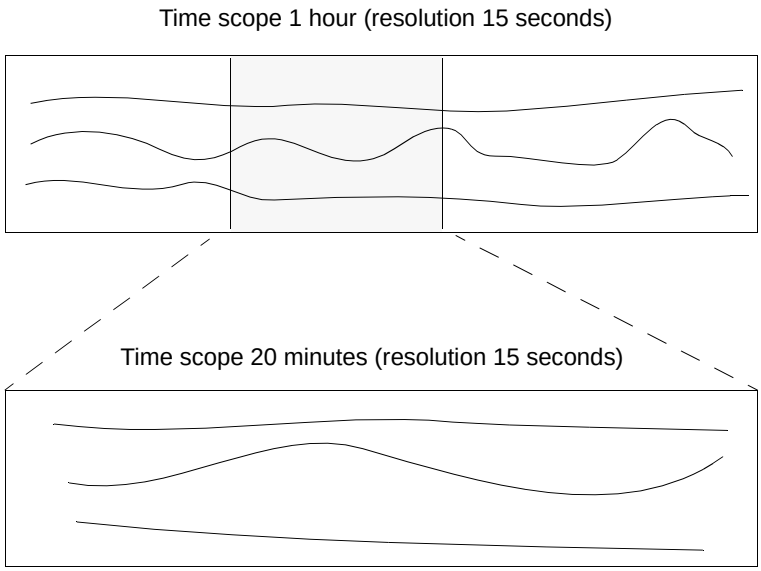


Figure 3-285. Zoom horizontal

Refresh Data

Refresh Data affects how logs are selected as it causes the log containing the most appropriate number of points to be selected. That is, logs giving the closest to a total number of 500 points are selected.

Zooming in will sometimes give very few points left in the scope. Refresh Data will then request for better, more data compacted logs, that is logs with shorter log intervals. The log selection algorithm select the log with the most detailed data in that case.

Keep Scope

This function makes it possible to save (keep) the current time scope to be used the next time the display is presented. Every kind of trend display brought up will show this time scope independently of their own saved time scope.

Log Information

To view the logs that are defined for an object or other details about the logs that are used to draw the traces, you can use the Log Information function.

To bring up the Log Information dialog box you press the **Log Information** button in the Analyze dialog.

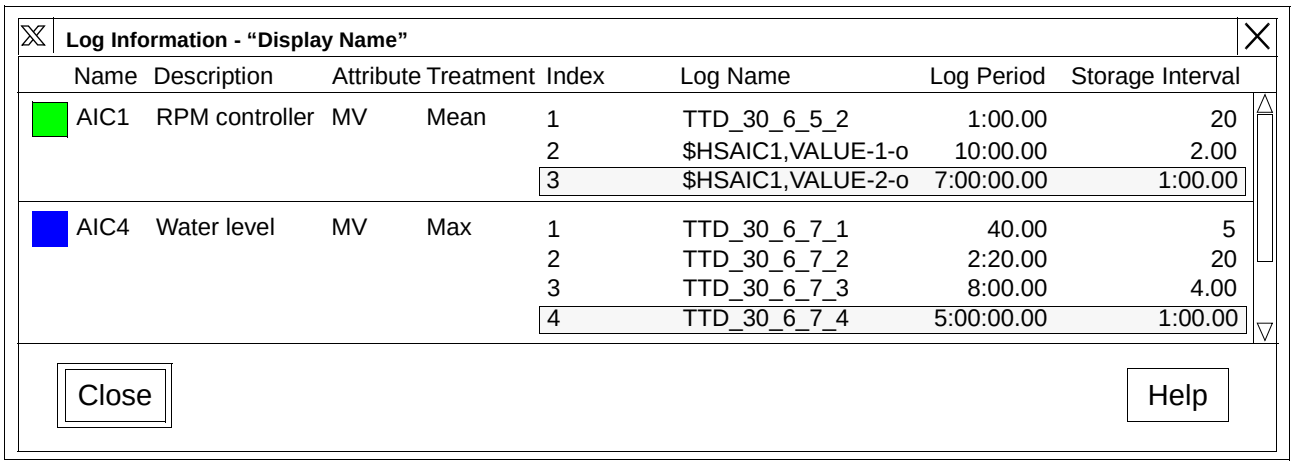

Log Information - "Display Name"
Name Description Attribute Treatment Index Log Name Log Period Storage Interval
AIC1 RPM controller MV Mean 1 TTD_30_6_5_2 1:00.00 20
2 $HSAIC1,VALUE-1-o 10:00.00 2.00
3 $HSAIC1,VALUE-2-o 7:00:00.00 1:00.00
AIC4 Water level MV Max 1 TTD_30_6_7_1 40.00 5
2 TTD_30_6_7_2 2:20.00 20
3 TTD_30_6_7_3 8:00.00 4.00
4 TTD_30_6_7_4 5:00:00.00 1:00.00
Close
Help

Figure 3-286. Example of a Log Information dialog box

The Log Information dialog box is used to get an overview of the logs that are defined for an object (that is the trace source) or details about the logs used to draw the traces. For each log the length of the log (log period) and the storage interval (distance between points in the log) is displayed. The logs are primarily sorted on storage interval and secondly on log period.

If new logs are configured while the Log Information dialog box is displayed then the dialog box will be automatically updated with the new information.

You can find the following in the Log Information dialog box:

- **Name**

  The object or log name for the trace (for example AIC4).

- **Description**

  The description of the object or log (for example 'Water level').

- **Attribute**

  The name of the object attribute used. Logs or specialized objects such as asynchronous logs does not show an attribute as the log is the object itself.

- **Treatment**

  The log function selected for the log, that is how the log is calculated before it is stored in the process station. The log functions/treatments supported by the system are: Mean, Mom, Max, Min, Sum, Sum of squares, Standard deviation.

  NOTE

  The different type of logs must have been created to use the different treatments.

- **Index**

  Index indicates which log the value is coming from. The ruler position on the Trace Diagram determines which log index that is highlighted in Log Information, for instance if the log index 3 is highlighted then it is the third log displayed in the Log Information dialog box for the object that is used to present the trace crossing the vertical ruler. If the ruler is inactive then there is no highlight.

- **Log Name**

  The name of a log from which the object takes its value (for example 'TTD_30_6_7_4').

- **Log Period**

  The length of the log in the process station. The log period is displayed in the following format:

  ```
  days:hours:minutes.seconds
  ```

  (for example '2:20.00', which means that the log period is 2 hours and 20 minutes).

- **Storage Interval**

  The time between two stored data points in the log, that is in the process station.
  The storage interval is displayed in the following format:

  ```
  days:hours:minutes.seconds
  ```

  (for example '1:00.00', '4.00', or a storage interval in seconds only '20', which means that the log period is 1 hour, 4 minutes and 20 seconds respectively).

- **Help Text**

  To bring up the help dialog box click on the **Help** button. This brings up the Help dialog box.

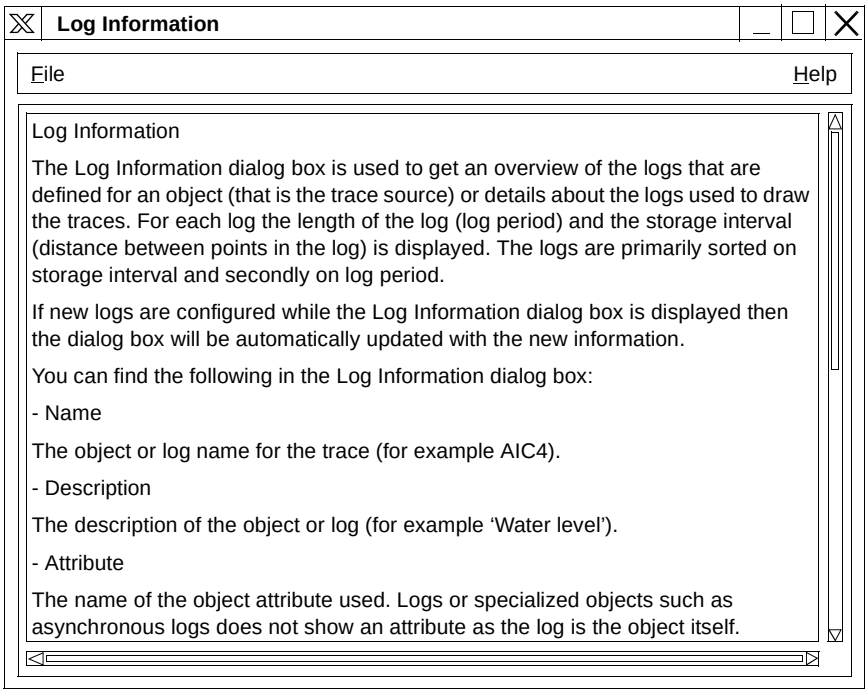

Log Information
File
Help
Log Information
The Log Information dialog box is used to get an overview of the logs that are defined for an object (that is the trace source) or details about the logs used to draw the traces. For each log the length of the log (log period) and the storage interval (distance between points in the log) is displayed. The logs are primarily sorted on storage interval and secondly on log period.
If new logs are configured while the Log Information dialog box is displayed then the dialog box will be automatically updated with the new information.
You can find the following in the Log Information dialog box:
- Name
The object or log name for the trace (for example AIC4).
- Description
The description of the object or log (for example 'Water level').
- Attribute
The name of the object attribute used. Logs or specialized objects such as asynchronous logs does not show an attribute as the log is the object itself.

Figure 3-287. Help dialog box

This dialog is presented when Help is requested from anywhere in this application (exception: when help is requested in error dialogs, a diagnosis dialog may be presented instead).

When the help dialog is requested from a **Help** button, the correct topic is already selected, and the corresponding help text is presented in the upper part of the dialog. The header of the topic (the line shown in the topics list) is presented as the dialog box title when the topic is selected.

When the dialog is present, you may select any of the topics (with double-click) and view the corresponding help text.

- **Exit Log Information**

  To exit Log Information click on the **Close** button.

3.3.19 Station Backup Configuration

The purpose of Station Backup is to be able to backup and restore all types of application data such as disk data, Oracle data and registry data.

Station backup is always taken from a station with a tape drive connected. This station can take local backup of itself and remote backup of other operator stations.

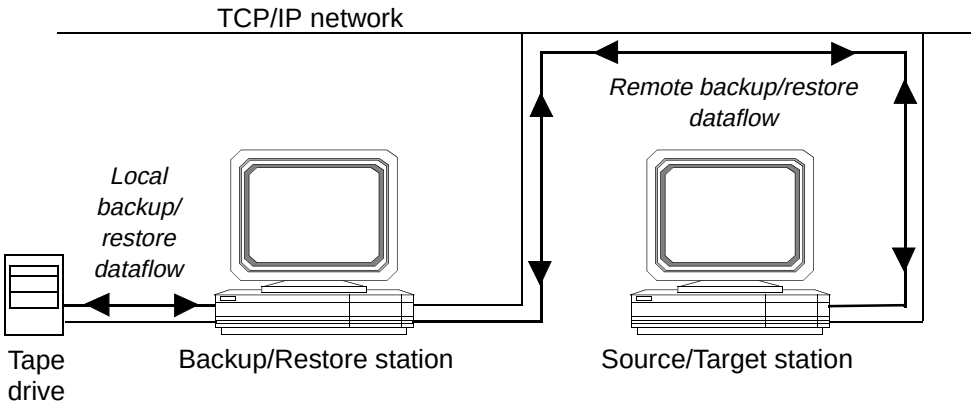


Figure 3-288. Station backup/restore

To work properly the Station Backup requires:

- five shares
- Windows NT Remote Shell Service (RSH)
- an installed and configured DAT-tape drive.

To install a tape drive, open the **Tape Devices** window (Start menu / Settings / Control Panel / Tape Devices), click the Driver tab to create a list of installed drivers, select the tape drive and click Add.

NOTE

The DAT-tape drive must not be connected or removed when the PC Workstation is on. The tape drive configuration requires administrator rights in the backup/ restore station.

If the installed tape drive does not respond during backup/restore, make a function restart (see Section 3.3.2 Station Restart) so that the changes take effect.

3.3.19.1 Shares

A storage device or a printer can be shared by several users in a network. Each share have a "permission list" that lists all users that can access the share, and the type of permission they have. If the share has a $ sign in the end of the share name, it is invisible when users browses for shares. The five shares are: ABB$, Exceed$, Prod$, SBackup$ and Sys32$. These shares are needed to make those directories that shall be backed up and restored accessible for remote stations.

The first time the Station Backup starts, a dialog will appear five times that forces the user to assign five drive letters to each needed share (see Section 3.3.19.3 Starting Station Backup for the First Time). This is necessary because the Backup utility can not backup and restore a share, but it can backup and restore a drive letter connected to the share.

3.3.19.2 Configuration of the Hosts and .rhosts files

To be able to perform remote backup and restore operations, you must configure the Hosts and the .rhosts files. You need administrator rights to be able to edit the Hosts and .rhosts files.

Configure the Hosts file

The **Hosts** file have to contain the TCP/IP adress and the computer's network name (DNS name) of the AdvaCommand for Windows NT stations that should be able to perform a remote shell request to the hosting station.

The format of the configuration in the file should look like this:

HOSTS file for RSH service (example)
IP address DNS Name

Example:

nnn.nnn.nnn.nnn Station name
192.36.661 as1

The location of the Hosts file is: WINNT\System32\drivers\etc\Hosts

Configure the .rhosts file

The .**rhosts** file have to contain the trusted station's DNS name and the trusted station's user(s).

The format of the configuration in the file should look like this:

.RHOSTS file for RSH service (example)
DNS Name users

Example:

Station name NTRoot customer Administrator
as1 customer adaption Administrator

The location of the .rhosts file is: WINNT\System32\drivers\etc\.rhosts

If the Hosts and .rhosts file are edited, the remote shell service has to be restarted to take effect.

3.3.19.3 Starting Station Backup for the First Time

The first time the Station Backup starts, the same type of dialog box appear five times forcing the user to assign a drive letter to each needed share.

The five shares are:

- ABB$
- Exceed$
- Prod$
- SBackup$
- Sys32$

Each share is pointing to a directory in the operator station (see Table 3-14).

Table 3-14. Required share configuration for Station Backup

Share	Pointing to Directory	Your Assigned Drive Letter(1)
ABB$	%advantdiskroot%\ABB\Advant	
Exceed$	c:\Program Files\Exceed.nt	
Prod$	%advantdiskroot%\Products	
SBackup$	%advantdiskroot%\Products\data\customer\backup	
Sys32$	\Winnt\System32	

(1) Enter the drive letters you have assigned to each share.

Assigning Drive Letters

To start the Station Backup for first time and assign drive letters to the five shares, do as follows:

1. Press **F2** or click on the screen button D2 (Station Backup) in the Maintenance dialog or stop at "Backup/Restore mode" at startup.

The following dialog box appears:

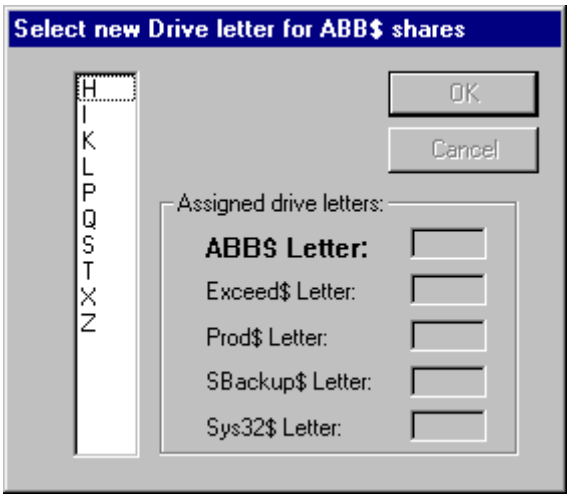


Figure 3-289. Dialog that forces the user to assign drive letters to each share

The dialog shows only the free drive letters. The drive letters A-E are reserved for local devices. If there is a drive letter that is connected to another share, that should be assigned to any of Station Backup's required shares, it is possible to dissconect the drive in NT Explorer and assign the drive letter from the File menu in the Station Backup main dialog.

WARNING

It is very important that the Drive letter/Share configuration is consistent. The station that performs the restore must have the same Drive letter/Share configuration as the backup tape. If not, the backup restore will corrupt the file system. We therefore recommend that you use the same drive letters in all operator stations.

The "Cancel" button will be disabled the first time these dialogs show up. That is because the user shall be forced to select drive letters to each share.

If you again use this dialog from the File menu in the Station Backup main dialog (see Section 5.1.2.4 Change Share Drive Letter), the Cancel button will be enabled.

2. Assign a drive letter to the first share, ABB$, by first selecting a drive letter and then either press the "OK" button or double-click on the prefered drive letter.

   The Station Backup will connect the drive letter to the local share and store the Configuration in the NT System Registry. The dialog box is updated and ready for the next assignment.

3. Assign a drive letter to the next share (Exceed$) and repeat this procedure for the remaining shares (Prod$, SBackup$ and Sys32$).

When you are about to assign a drive letter to the last share, the last dialog box should look like the figure below.

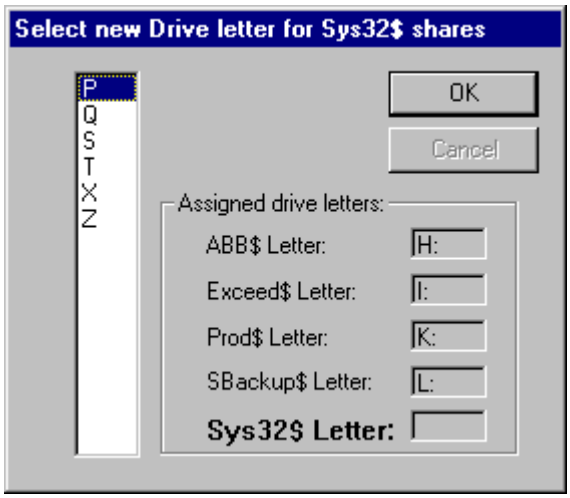


Figure 3-290. Last drive letter selection dialog

4. Click on the "OK" button in the last dialog box.

   The dialog box is replaced by the Station Backup main dialog.

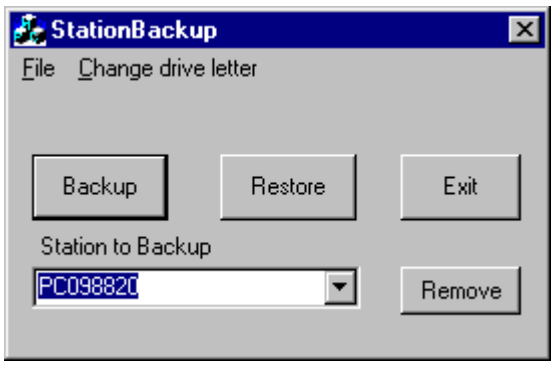


Figure 3-291. Station Backup main dialog

5. Either click on the "Exit" button to exit Station Backup or continue making a complete backup or restore as described in Section 5.1.2 Backup and Restore of Operator Station Disk Data.

3.4 Menus

In this section, the different sets of dynamic function keys are defined. The functions associated with the keys are described in Section 3.3 Application Procedures, above.

Click on **System Config** under the item **System Display Keys** in the pop-up menu **Operation**.

D1 AdvaCommand…	D2 AdvaBuild…	D3	D4	D5
D6 Settings…	D7 Station…	D8 Maintenance…	D9	D10

Figure 3-292. Dynamic function keys - Configuration dialog

From this set of dynamic function keys, you can select a suitable configuration tool group. The groups and their dynamic function keys are as described below.

D1 AdvaCommand…

Configuration of a group of functions mainly related to operator interaction, for example process sectioning and external alarm.

D2 AdvaBuild…

Configuration of a group of functions mainly related to engineering, for example Display Builder and Display Installer.

D6 Settings…

Configuration of a group of functions to set operator station parameters.

D7 Station…

Activation of a group of functions to restart operator station application.

D8 Maintenance…

Activation of a group of functions to back up/restore handling and maintenance of RTA configuration data.

Descriptions of the dynamic key sets for each group follow.

D1 AdvaCommand…

D1 Event Printer	D2 Status List	D3 External Alarm	D4 Group Alarm	D5 TTD Configuration
D6	D7	D8	D9	D10

Figure 3-293. D1 AdvaCommand…

D1	Event Printer (if option Process Sectioning is NOT installed)
(D1)	Process Sectioning (if option Process Sectioning is installed – See *AdvaBuild Process Sectioning User's Guide*)
(D2)	Status List (Option – See *AdvaBuild Status List User's Guide*)
D3	External Alarm
D4	Group Alarm
D5	TTD Configuration

D2 AdvaBuild...

D1 Display Builder	D2 Display Installer	D3 Display Transfer	D4	D5
D6 Control Config.	D7 Text Edtitor	D8	D9	D10

Figure 3-294. D2 AdvaBuild…

(D1)	Display Builder (Option – See *AdvaBuild Display Builder User's Guide*)
D2	Display Installer
D3	Display Transfer
D6	Control Configuration (you can reach the software option On-line Builder from the Control Configuration – For more information aboutOn-line Builder, see *AdvaBuild On-line Builder User's Guide*).
D7	Text Editor

D6 Settings…

D1 Date and Time	D2 Station Settings	D3 Printer Config.	D4 Hardcopy Config.	D5
D6	D7	D8	D9	D10

Figure 3-295. D6 Settings…

D1	Date and Time
D2	Station Settings
D3	Printer Configuration
D4	Hardcopy Configuration

D7 Station…

D1 Function Restart	D2 Station Restart	D3	D4	D5
D6 Terminal Window	D7	D8	D9	D10

Figure 3-296. D7 Station…

D1	Function Restart
D2	Station Restart
D6	Terminal Window

D8 Maintenance…

D1 RTA Board Backup	D2 Station Backup	D3	D4 RTA Board Config.	D5 View Diagnostic Log
D6 Object References	D7 Node Broker	D8 Log Database Config	D9	D10

Figure 3-297. D8 Maintenance…

D1	RTA Board Backup
D2	Station Backup
D4	RTA Board Configuration
D5	View Diagnostic Log *(if Diagnostic Log is on in Station Setting and Function Restart has been done since set)*
D6	Object References
D7	Node Broker
D8	Log Database Configuration

Chapter 4 Operation

AdvaCommand's functionality includes advanced features for communication with the operator in runtime, such as:

- AdvaCommand Interface

  (including presentation of user-defined Process Displays, standard displays, curve displays, reports and various lists, as well as effective operator dialogs for manual control)

- AdvaCommand Event and Alarm
- AdvaCommand System Status.

4.1 Product Operation

This section covers some basic topics regarding runtime operation:

- Screen layout
- Keyboards, pop-up menus and cursor control devices.

4.1.1 Screen Layout

The screen is divided into several areas, each reserved for a specific purpose. The upper portion of the layout is called the **Screen Header** and the lower portion is called the **Dialog Area**. The area between these two is called the **Display Area**.

The basic screen layout is shown below:

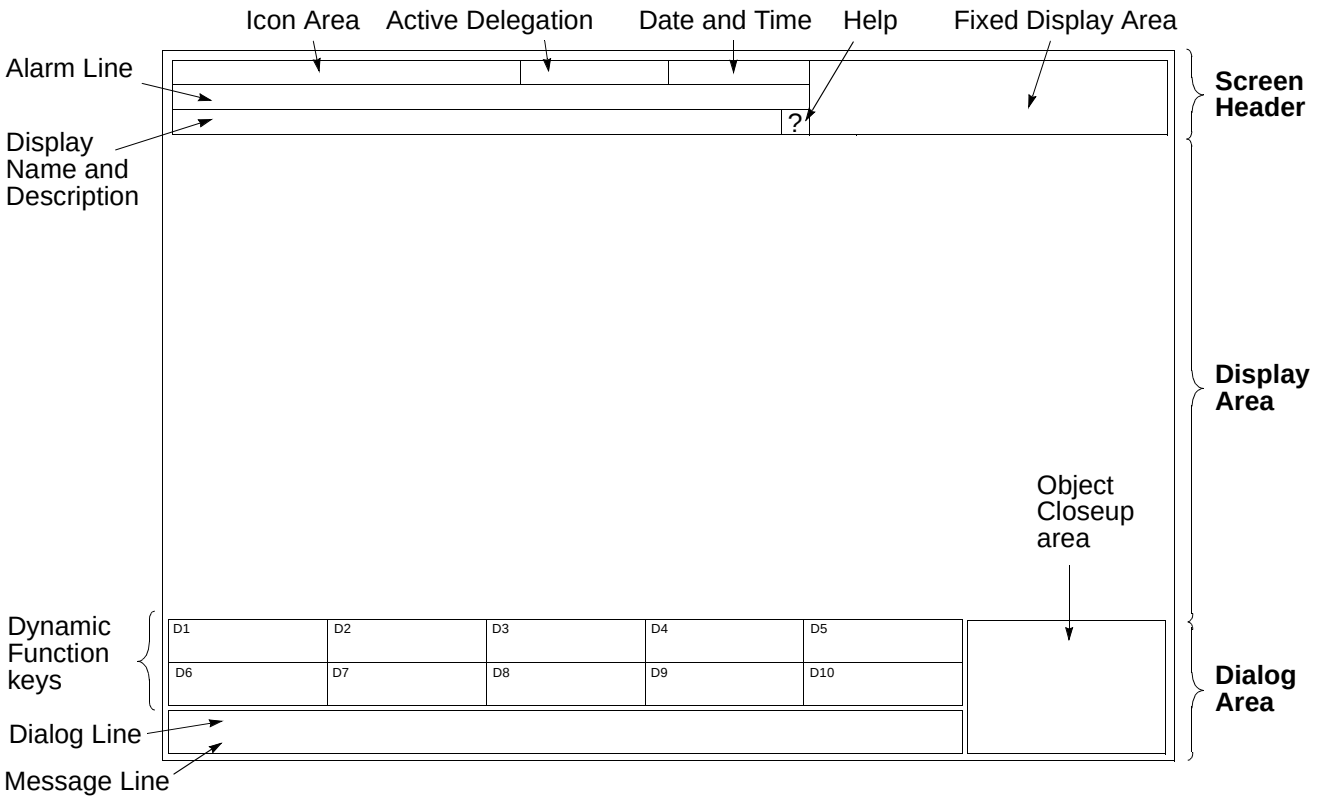


Figure 4-1. Basic screen layout

4.1.1.1 Screen Header

The **Icon area** contains the following icons:

Dedicated Screen

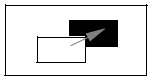


Figure 4-2. Dedicated screen

This function is not used, since only one screen is available in AdvaCommand for Windows NT.

System Alarm



Figure 4-3. System alarm

The system alarm icon, a red triangle with a yellow background, indicates an unacknowledged system alarm. To call up the System List, position the **cursor on the icon** and then click with the **select mouse button**. You acknowledge the system alarm in the System List.

Silence of Audible Alarm

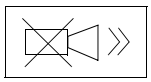


Figure 4-4. Silence of audible alarm

To silence an audible alarm, position the **cursor on the icon** and click with the select mouse button or select the item **Silence** in the pop-up menu **Operation**. The alarm announcement is stopped but the alarm is **NOT** acknowledged.

Active Configuration Tools

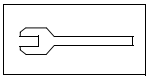


Figure 4-5. Active configuration tools

The Active Configuration Tools icon, a wrench, indicates that at least one configuration tool is active.When an error occurs during execution for a configuration tool, the background becomes yellow. To call up a list of all the active configuration tools, position the **cursor on the icon** and then click with the **select mouse button**.

Authority Key



Figure 4-6. Authority key

The authority key icon indicates the Max Dialog. Two dialog types are available: Max and Min Dialogs. With the Min Dialog, you can execute the commands necessary during normal operations such as change the operation mode, start and stop the selected object, etc. The Max Dialog contains, in addition to the Min Dialog, further control options, such as changing limit values and blocking alarm handling.

You change the authority with the item **Max Dialog** from the pop-up menu **Operation**. When Max dialog is chosen a password dialog box appears (see Section 3.2.2, Authority).

Active Delegation

Shows which of the 10 delegation displays is active.

NOTE

This is only valid if you have the AdvaCommand Process Sectioning software option.

Date and Time

1998-01-23 12:01

Figure 4-7. Date and time

Date and time shows the current date and time measured by the system clock. The date is presented as YYYY-MM-DD.

Alarm Line

SFWA1542.14 WaterLevel LimH1 13:09:36

Figure 4-8. Alarm line

The latest unacknowledged process alarm is displayed in the alarm line. You can select the object causing the alarm by positioning the **cursor on the alarm line** and then click with the **select mouse button**. The object closeup for the object causing the alarm and its dialog are displayed. You can acknowledge the alarm in the Alarm List.

Fixed Display Area

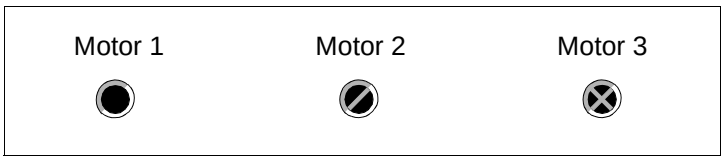


Figure 4-9. Example of a fixed display

A fixed display, if defined, is always presented on the screen independent of what is shown in the display area. The fixed display is designed by the customer. It can contain important information that the operator always sees in runtime. The display can contain static as well as dynamic information.

You can assign a fixed display to each screen. If AdvaCommand Process Sectioning is included, you can assign a fixed display to each delegation display. This means that you can have a maximum of 20 fixed displays (10 delegation displays on each screen) assigned to the operator station.

The fixed display is built in AdvaBuild Display Builder. For further information, refer to the manual *AdvaBuild Display Builder User's Guide*.

4.1.1.2 Dialog Area

The **Dialog area** features the following functions:

Dynamic Function Keys

D1	D2	D3	D4	D5
D6	D7	D8	D9	D10

Figure 4-10. Dynamic function keys

The dynamic function keys give you access to a large dialog repertoire, including display selection and dialogs for operations and setting object parameters. Ten of the twelve function keys on the keyboard, marked **F1** to **F10**, correspond to the ten **screen buttons, D1 to D10**, at the bottom of the screen.

Dialog Line

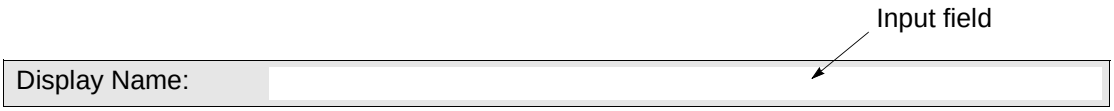


Figure 4-11. Dialog line

The dialog line provides you with prompts and information about selected objects. To the right there is an **input field** for the operator to enter, for example, a display name for display request, object names and object parameters such as analog values.

Message Line

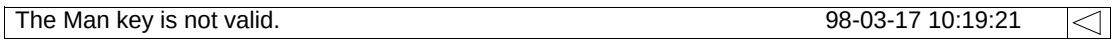


Figure 4-12. Message line

In the message line, **error messages** and **information** relating to current activity are displayed. Also, the **time** of the message is displayed. Using the **arrows**, you can recall the **10 latest messages**. The messages are pale yellow and the current one also has a frame.

Object Closeup Area

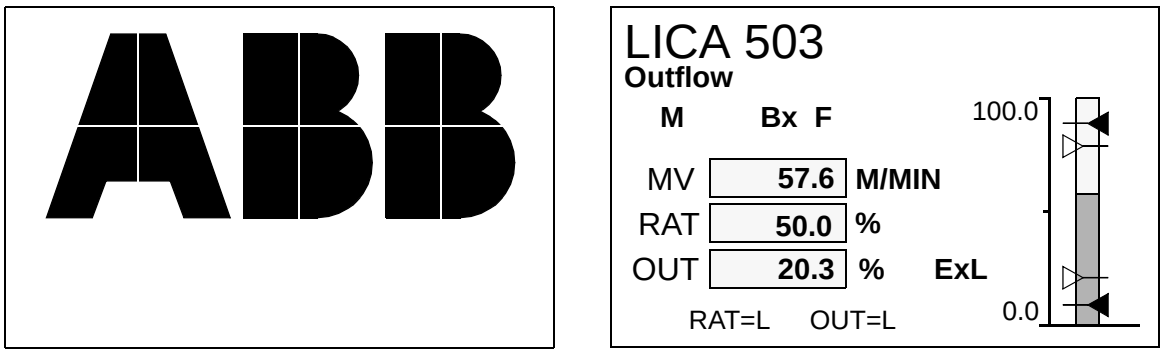


Figure 4-13. Example of the object closeup area (with no object selected and with object selected)

Object closeup is the area for detailed information about a selected process object.

4.1.1.3 Display Area

The display area covers the majority of the screen.

Display Name and Description

G503.400	Feed Water 1

Figure 4-14. Display name and description

The name and description of the presented base display appear here. The name of an overlap display appears in the window's title bar.

Help



Figure 4-15. Help

The question mark indicates that the presented base display has a help display. You call up the help display with the subitem **Help** from the item System Display Keys in pop-up menu **Operation** or position the **cursor on the icon** and click with the **select mouse button**. The help display is always an overlap display.

The status of the process is shown on different types of displays:

- **Process displays** are application-specific displays, normally designed by the customer. The values and states of objects such as controllers, sequences, motors and measurement points are presented dynamically.
- **Group displays** are a standard way of presenting cursory information about the process. The basic layout is standardized, but the customer defines which objects to show where.
- **Object displays** contain all the information available about single process objects. These displays require no configuration, but are automatically available for all objects defined.
- **Event** and **Alarm lists** contain messages about events and alarms in the process.
- **System displays** present information about the system.
- **Trend displays** correspond to traditional recording charts by presenting historical data in graphic form.

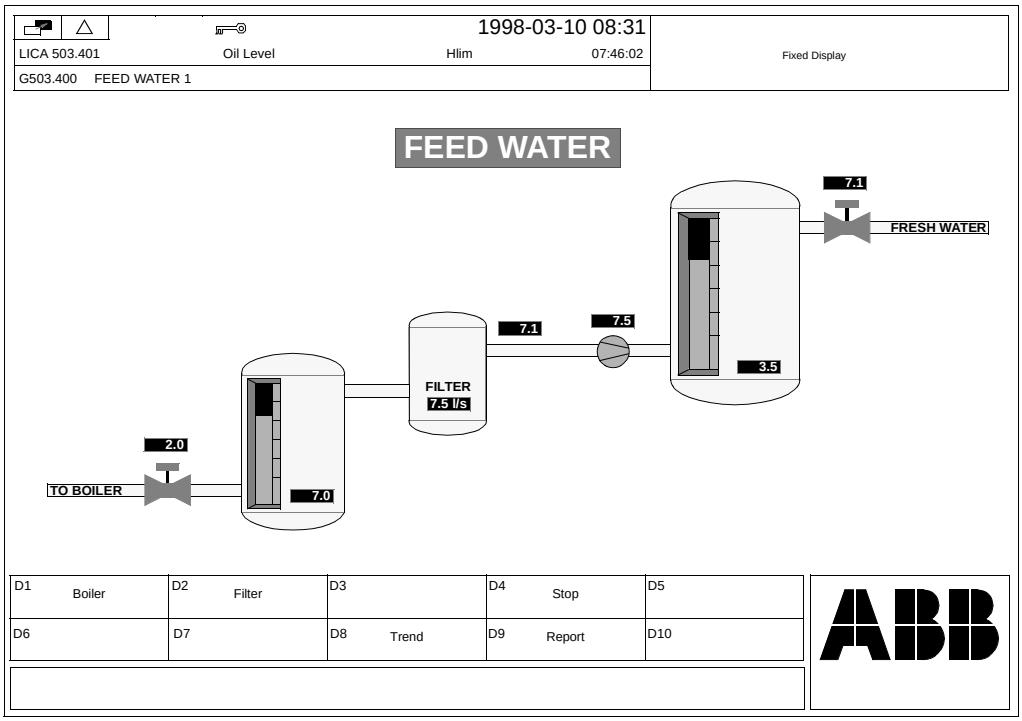


Figure 4-16. Example of a process display

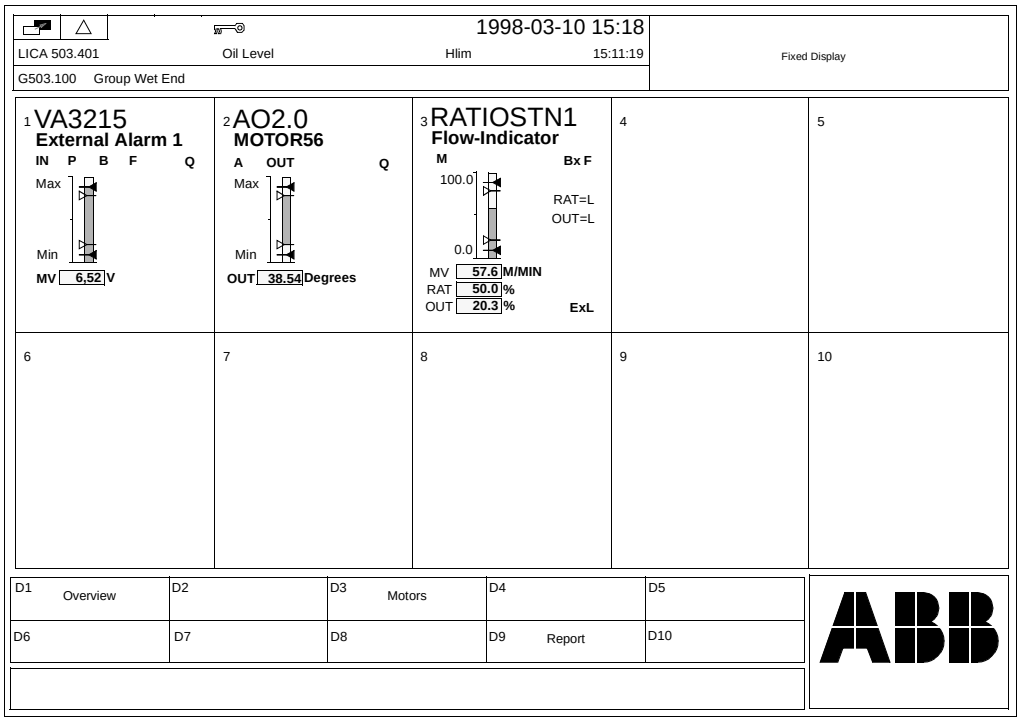


Figure 4-17. Example of a group display

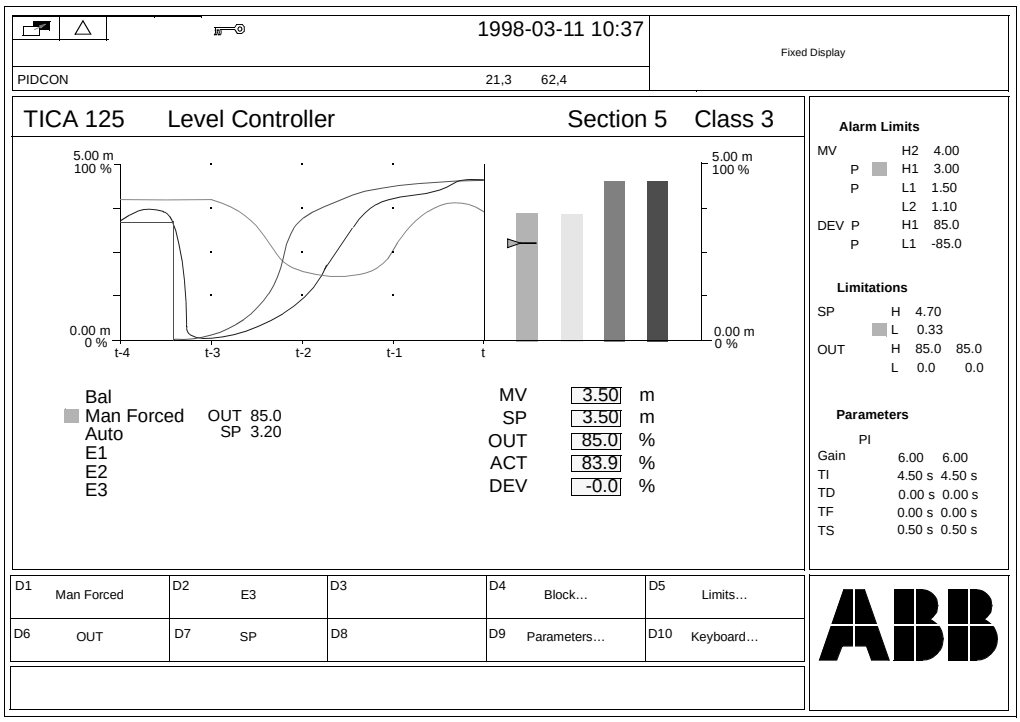


Figure 4-18. Example of an object display

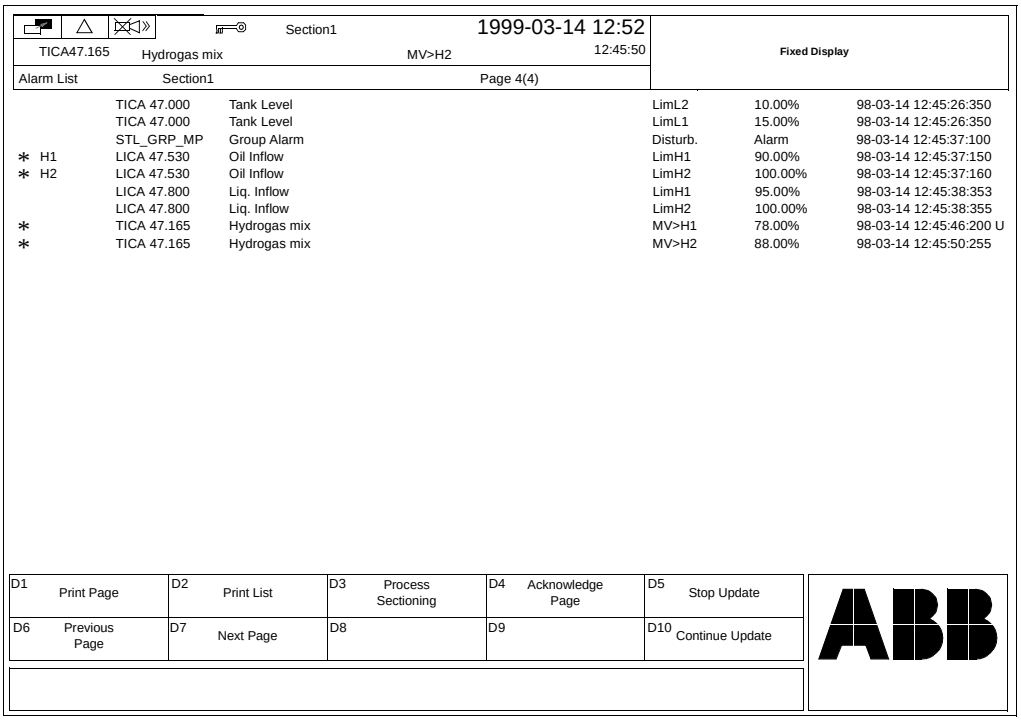

Section1
1999-03-14 12:52
TICA47.165
Hydrogas mix
MV>H2
12:45:50
Fixed Display
Alarm List
Section1
Page 4(4)
TICA 47.000 Tank Level LimL2 10.00% 98-03-14 12:45:26:350
TICA 47.000 Tank Level LimL1 15.00% 98-03-14 12:45:26:350
STL_GRP_MP Group Alarm Disturb. Alarm 98-03-14 12:45:37:100
* H1 LICA 47.530 Oil Inflow LimH1 90.00% 98-03-14 12:45:37:150
* H2 LICA 47.530 Oil Inflow LimH2 100.00% 98-03-14 12:45:37:160
LICA 47.800 Liq. Inflow LimH1 95.00% 98-03-14 12:45:38:353
LICA 47.800 Liq. Inflow LimH2 100.00% 98-03-14 12:45:38:355
* TICA 47.165 Hydrogas mix MV>H1 78.00% 98-03-14 12:45:46:200 U
* TICA 47.165 Hydrogas mix MV>H2 88.00% 98-03-14 12:45:50:255
D1 Print Page
D2 Print List
D3 Process Sectioning
D4 Acknowledge Page
D5 Stop Update
D6 Previous Page
D7 Next Page
D8
D9
D10 Continue Update

Figure 4-19. Example of an alarm list display

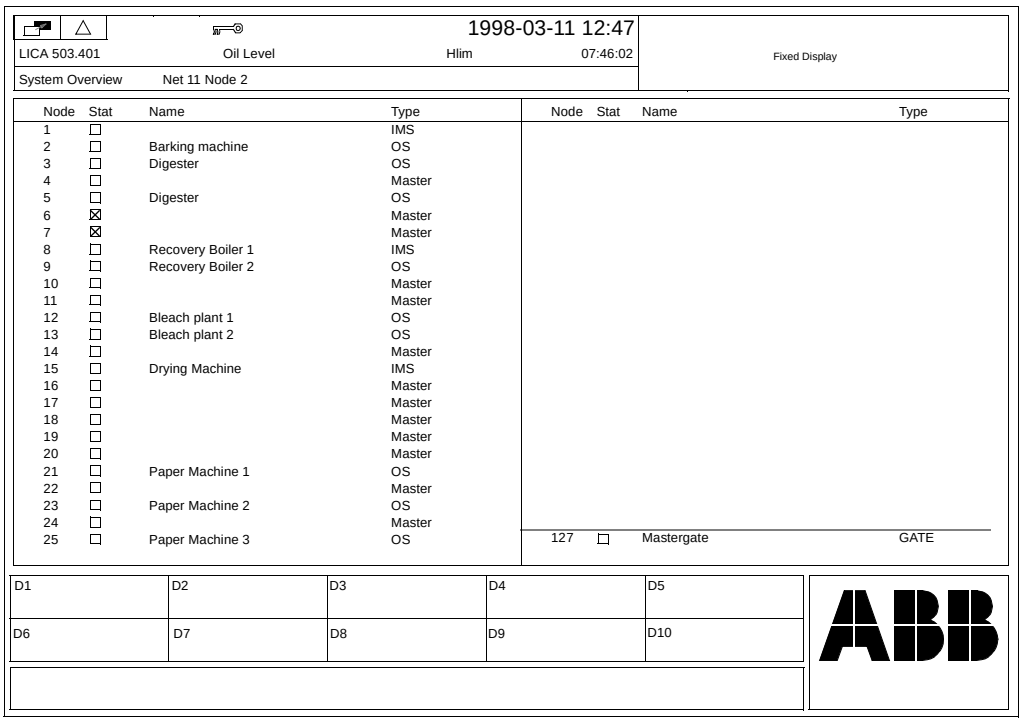


Figure 4-20. Example of a system status overview display

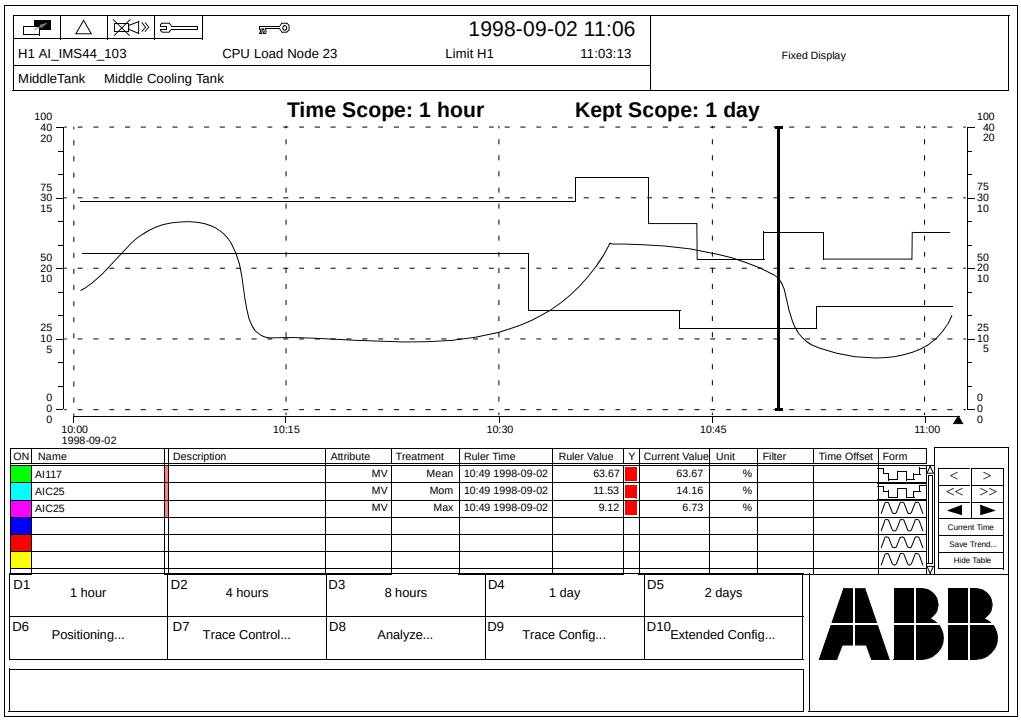


Figure 4-21. Example of a trend display

The displays can be presented in two ways:

- **Base display**, which covers the whole display area. It always removes and closes all other displays in the display area before being presented.
- **Overlap display**, which is presented on top of the currently shown displays, covering the current displays, or parts of them, without affecting them in any way. Overlap displays can be moved, resized and closed.

All predefined system displays are base displays. Some system displays can be called up as overlap displays.

4.1.2 Keyboard Operation

A standard **QWERTY** keyboard supports only some runtime operation and system engineering functions. Most of these functions are instead controlled with the pop-up meny (see Section 4.2.4, Pop-up Menus).

Alphanumeric Keys on a Standard QWERTY Keyboard

Use these keys to enter **alphabetic and numeric characters** and standard punctuation marks such as **slash** (/), **asterisk** (*), **colon** (:), and **period** (.).

Symbols identify **commonly used keys** as follows:

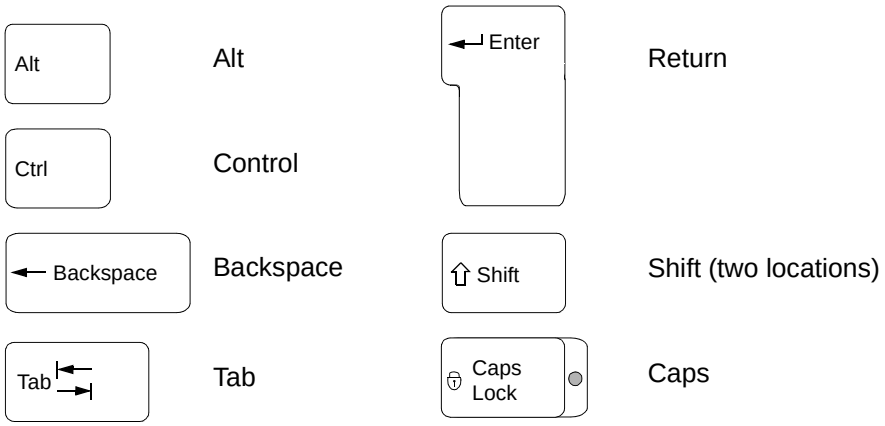


Figure 4-22. Example of commonly used keyboard keys for a PC

Function Keys / Dynamic Function Keys

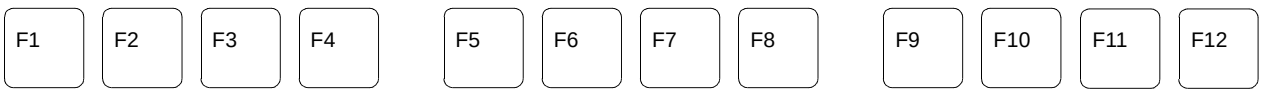


Figure 4-23. Function keys / Dynamic function keys

Ten of the twelve function keys on the keyboard, marked **F1** to **F10**, correspond to the ten **screen buttons, D1 to D10**, at the bottom of the screen. The keys represent a dialog and show all possible actions the operator can choose for the selected object or display. The choice of actions can be controller mode, other displays, etc. The dynamic function keys are used frequently by the operator.

4.1.2.1 Keyboard Handling on Standard Keyboard

The standard keyboard can be used without any special configuration.

It is possible though, to define keys on the keyboard. In this way you can define your own layout of the keyboard and create your own "functional" keyboard.

See Appendix C, Keyboard Functions for a short description of all the events for the operator station functions, and the Keysym names for most common keypad keys.

How to Configure the Keyboard

There is one keyboard file of interest available:

- `EXCeed4Keyboard.dat`

  Used for the standard keyboard.

This file is placed under

`/products/data/standard/OS/config/`

To configure the keyboard for some or all events, copy the file to

`/products/data/adaptions/OS/config/` or

`/products/data/customer/OS/config/` and edit.

The file contain the events for specific operator station functions. Only the events for the dynamic function keys are currently configured. Every event contains Keysym, Keyboardtype and Modifiers.

Keysym	Replace VoidSymbol in Keysym, in the file, to the value of the key to be configured.	
Keyboardtype	Already defined.	
Modifiers	=None	means that only the key has to be pressed
	=Shift	means that **<Shift>** key has to be pressed
	=Control	means that **<Ctrl>** key has to be pressed.

```
DisplayMenuKey = Event
 {
   Keysym = VoidSymbol
   Keyboardtype = 206
   Modifiers = None
 }
```

Figure 4-24. Part of the keyboard file EXCeed4Keyboard.dat

Example:

We want to configure the keyboard so that the display menu appears when the key with the star, *, is pressed on the keyboard. To achieve this, do as follows:

1. Copy the keyboard file **EXCeed4Keyboard.dat** from /products/data/standard/OS/config/ to /products/data/customer/OS/config/.
2. Open the keyboard file.
3. Set Keysym=KP_Multiply for the event DisplayMenuKey.
4. Save the keyboard file.
5. Make a function restart.

4.1.3 Mouse Operation

The entire mouse device moves for cursor action. The mouse has **one select mouse** button on the left. The **select mouse button-**enables you to choose a menu item, field, button, etc., on the screen. Use the button to the right to display pop-up menus.

4.2 Operating Instructions

4.2.1 AdvaCommand User Interface

4.2.1.1 Display Types and Presentation Possibilities

There are two main types of displays:

1. **System defined displays**

   Ready for use after loading the system software. Examples: System Status displays and lists, configuration displays, object displays.

2. **User defined displays**

   Designed by the user. Examples: Process-, Group and Help displays.

A display can be shown on screen in three different ways:

- Base display
- Overlap "cut" display
- Overlap "zoom" display

Base Display

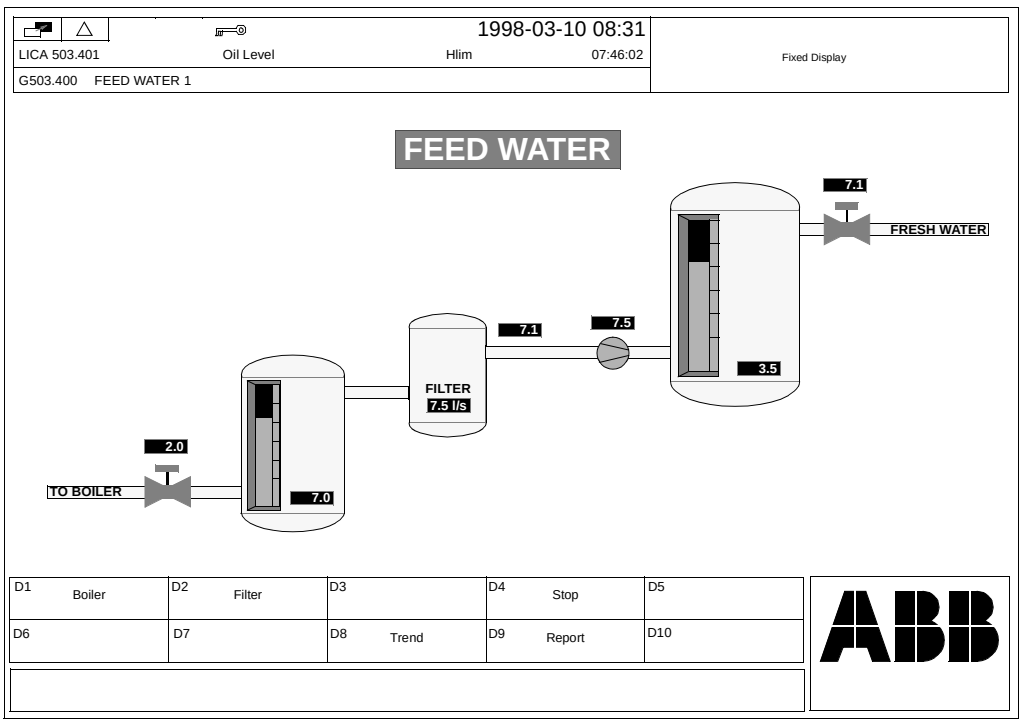


Figure 4-25. Base display

A base display covers the whole display area.

It always removes and closes all other displays in the display area before being presented.

The size of base displays is fixed.

Overlap Displays

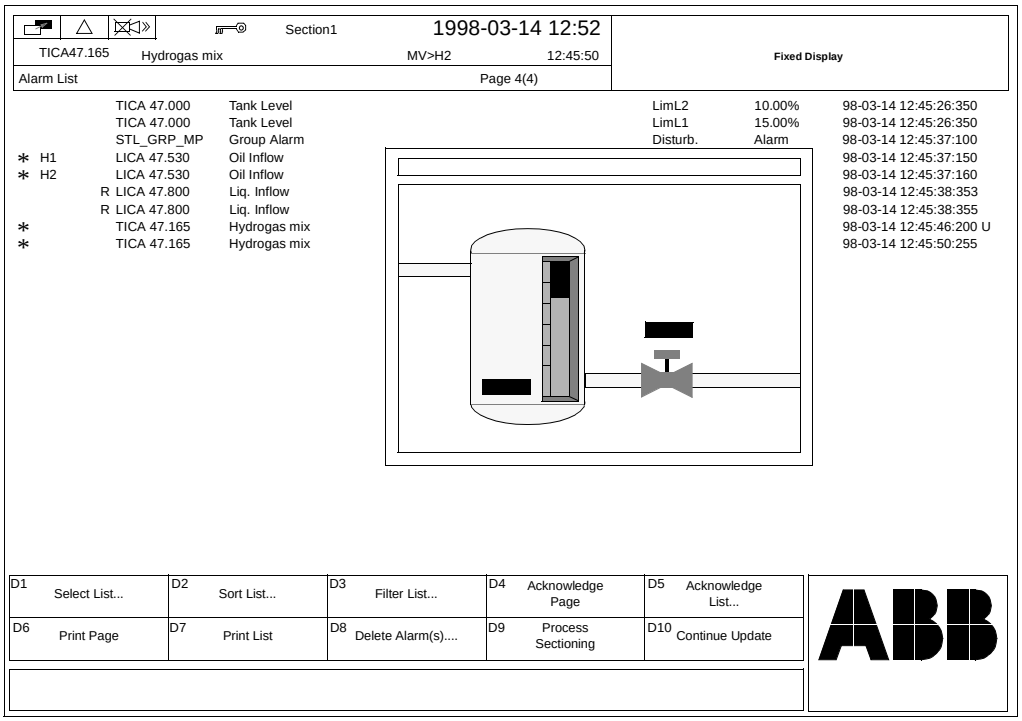

Section1
1998-03-14 12:52
TICA47.165
Hydrogas mix
MV>H2
12:45:50
Fixed Display
Alarm List
Page 4(4)
TICA 47.000 Tank Level LimL2 10.00% 98-03-14 12:45:26:350
TICA 47.000 Tank Level LimL1 15.00% 98-03-14 12:45:26:350
STL_GRP_MP Group Alarm Disturb. Alarm 98-03-14 12:45:37:100
* H1 LICA 47.530 Oil Inflow 98-03-14 12:45:37:150
* H2 LICA 47.530 Oil Inflow 98-03-14 12:45:37:160
R LICA 47.800 Liq. Inflow 98-03-14 12:45:38:353
R LICA 47.800 Liq. Inflow 98-03-14 12:45:38:355
* TICA 47.165 Hydrogas mix 98-03-14 12:45:46:200 U
* TICA 47.165 Hydrogas mix 98-03-14 12:45:50:255
D1 Select List...
D2 Sort List...
D3 Filter List...
D4 Acknowledge Page
D5 Acknowledge List...
D6 Print Page
D7 Print List
D8 Delete Alarm(s)....
D9 Process Sectioning
D10 Continue Update

Figure 4-26. Example of an overlap zoom display

An overlapping display is presented on top of the currently shown base display, thus covering it without affecting it in any other way.

Overlapping displays can be moved, resized and closed.

There are two types of overlapping displays:

Overlap "Cut"	The content is partly visible if the window is too small.
Overlap "Zoom"	The contents is always completely visible since its size is adapted to the size of the window.

A maximum of five overlapping displays can be presented at the same time.

Close Overlaps

If you want to close all overlap displays at the same time, either click on the Close Overlaps button in the **Operation Keys box** (from the pop-up menu Operation) or directly select the item Close Overlaps in the same **pop-up menu**.

All overlap displays are closed.

Possible Presentation Types

For some display types the way of presentation is fixed by the system, others can be configured by the user (see below). When selecting a display from the display menu, the user can choose between Base and Overlap display in a dialog box.

Table 4-1. System defined display types and their possible presentation types

System defined display type	Possible presentation type		
	Base display	Overlap cut display	Overlap zoom display
Object Trend	Yes	No	Yes
Object Display	Yes	No	Yes
System Status Displays	Yes	No	No
System Configuration Displays	Yes	No	Yes
Status Lists	Yes	No	No
Process Event and Alarm Lists	Yes	Yes	No
System List	Yes	Yes	No
Object Close-up	—	Yes	No
Help Displays	No	Yes	Yes

Table 4-2. User defined display types and their possible presentation types

User defined display types	Possible presentation type		
	Base display	Overlap cut display	Overlap zoom display
Process Displays	Yes	Yes	Yes
Group Displays	Yes	Yes	Yes
Trend Displays	Yes	Yes	Yes
Help Displays	No	Yes	No

Help Windows

Several help windows are available in the operator station. In general there is a help window for every dialog box: display installer, start-up mode box etc. To open a help window, just click on help. Use these windows in the same way as all other windows or dialog boxes. Close by clicking on OK or press the cancel button or select Exit in the File manu.

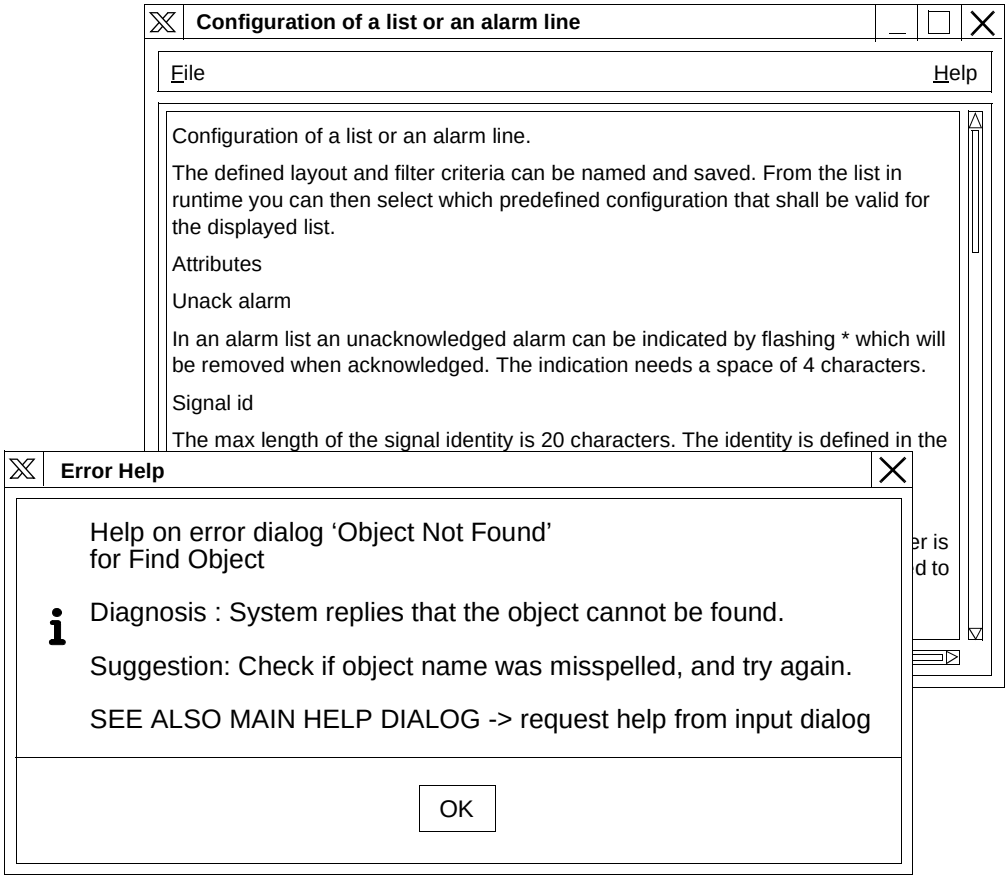

Configuration of a list or an alarm line
File
Help
Configuration of a list or an alarm line.
The defined layout and filter criteria can be named and saved. From the list in runtime you can then select which predefined configuration that shall be valid for the displayed list.
Attributes
Unack alarm
In an alarm list an unacknowledged alarm can be indicated by flashing * which will be removed when acknowledged. The indication needs a space of 4 characters.
Signal id
The max length of the signal identity is 20 characters. The identity is defined in the
Error Help
Help on error dialog 'Object Not Found'
for Find Object
Diagnosis : System replies that the object cannot be found.
Suggestion: Check if object name was misspelled, and try again.
SEE ALSO MAIN HELP DIALOG -> request help from input dialog
OK

Figure 4-27. Example of a help windows

4.2.1.2 Methods for Display Access

You can call up several displays simultaneously in the display area. You can call up overlap displays in addition to a base display. In addition, you have a fixed display and an object closeup display presented in reserved areas. The fixed display is always presented on the screen and the object closeup display is presented when you select the object.

You can call up displays in the display area in the following ways:

- From a **Display Menu** using cursor positioning.
- By using the **Dynamic Function keys**.
- By using the **Previous Display** button/item.
- By using the **paging** buttons/items.
- By using the **Help Display** call-up.
- By using the **Display Request** key and entering the display name.
- By using the **Object to Display** key.
- By using **Display Links** in Process Displays.
- By using **Operation Keys buttons and pop-up menu items for System Displays**.

From a Display Menu

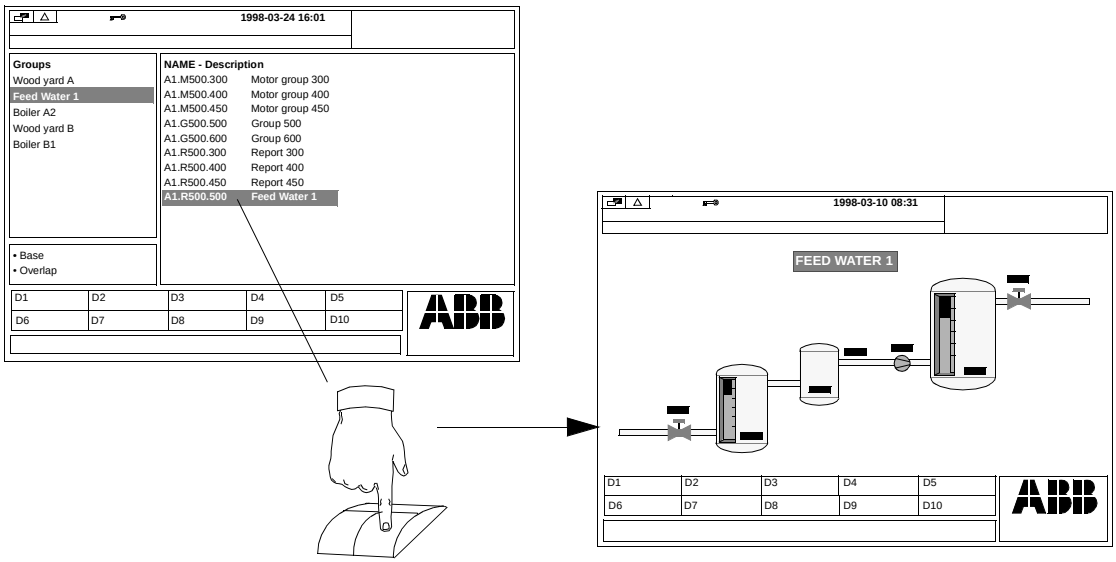


Figure 4-28. Display call-up from a display menu

Displays are stored in libraries. The displays can be base, overlap or both. You select the display type when you call up the display.

To call up the displays from a **Display** menu, do the following:

1. Either click on the **Display Menu** button in the **Operation Keys box** (from the pop-up menu Operation) or directly select the subitem Display Menu from the item Display Keys in the same **pop-up menu.**

   A list of all groups is displayed in the Display Menu.

2. Position the **cursor** on the **group name**.
3. Click with the **select mouse button**.

   The displays stored in the group are listed.

4. Select **display type** by pressing the **Base** or **Overlap** push button in the menu (**Base** is default).
5. Position the **cursor** on the **display name** in the list.
6. Click with the **select mouse button**.

The display is presented as a base or overlap display, depending on which you choose. If a display is configured only as a base display and you have requested an overlap display, a message that the display does not exist as an overlap display is presented.

You can also call up the **Display Menu** as an overlap display either by activating the toggle button Overlap and clicking on the **Display Menu** button in the **Operation Keys box**, or directly select the subitem Overlap Display Menu from the item Display Keys in the same **pop-up menu.**

Dynamic Function Keys

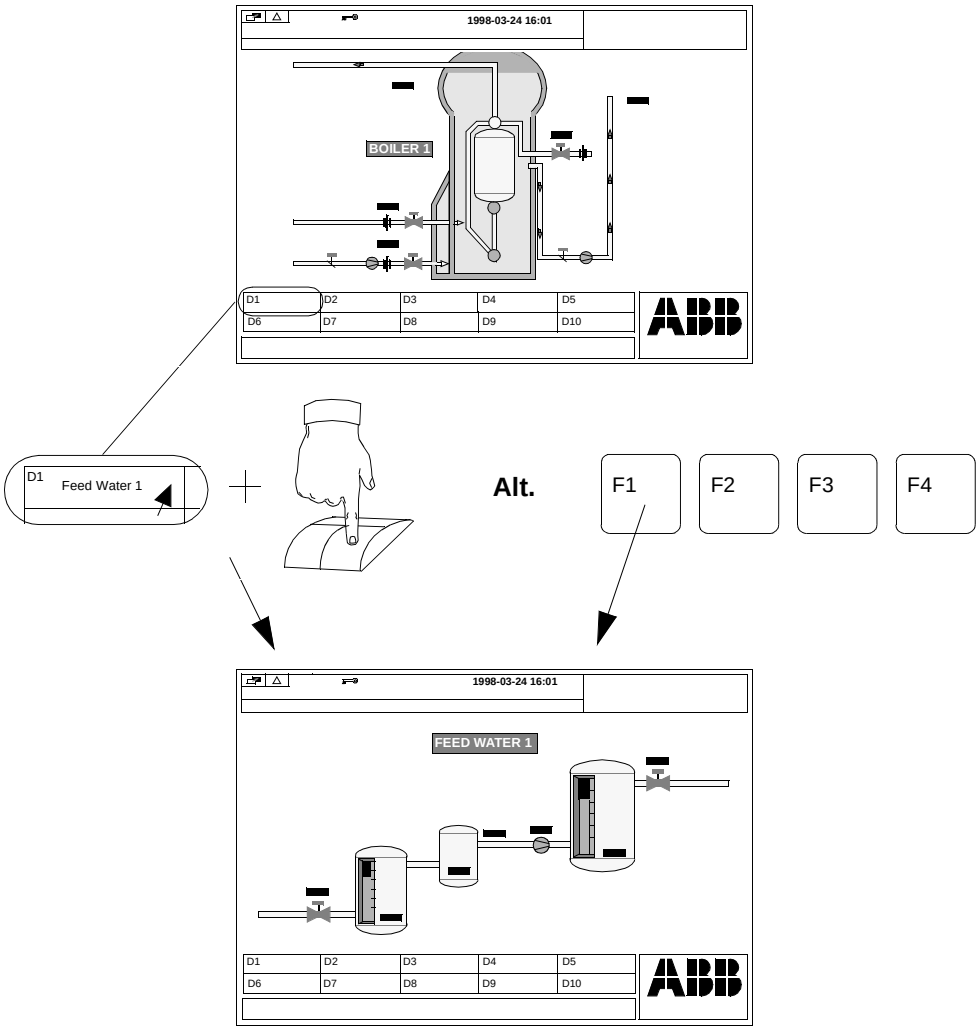


Figure 4-29. Display call-up by dynamic function keys

To call up the displays by dynamic function keys, do as follows:

- Position the **cursor** on the requested **screen button** and click with the **select mouse button**.

  or

- Press the requested **dynamic function key** on the keyboard, which correspond to the screen button with the same number at the bottom of the screen

  You can call up both base and overlap displays in this way.

The dynamic function keys are configured in the **AdvaBuild Display Builder**.

Previous Display Button/item

You can toggle between the base display presented on the screen and the base display most recently called up on the same screen.

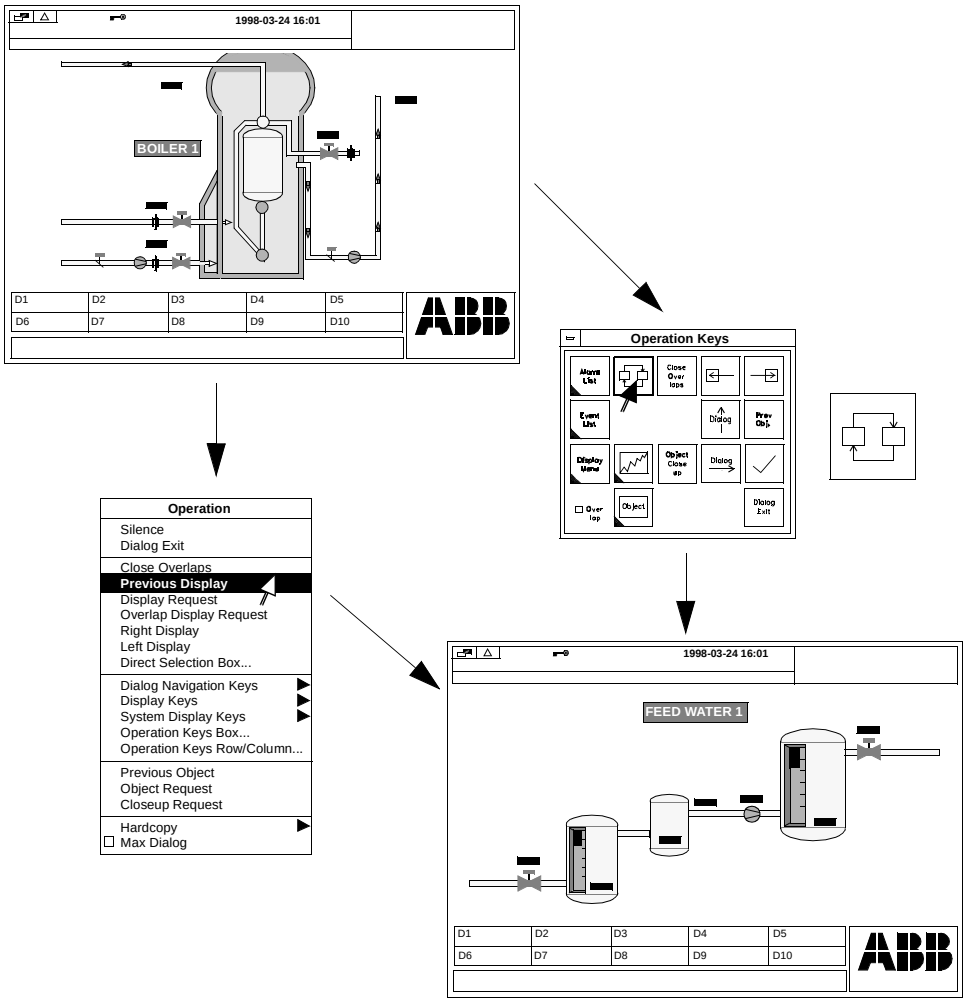


Figure 4-30. Display call-up by previous display button/item

To call up the previously presented base display, you either click on the **Previous Display** button in the **Operation Keys box** or directly select the item Previous Display in the same **pop-up menu**.

NOTE

You can remove all overlap displays either by clicking on the **Close Overlaps** button in the **Operation Keys box**, or directly select the item Close Overlaps in the same **pop-up menu**.

Paging Buttons/items

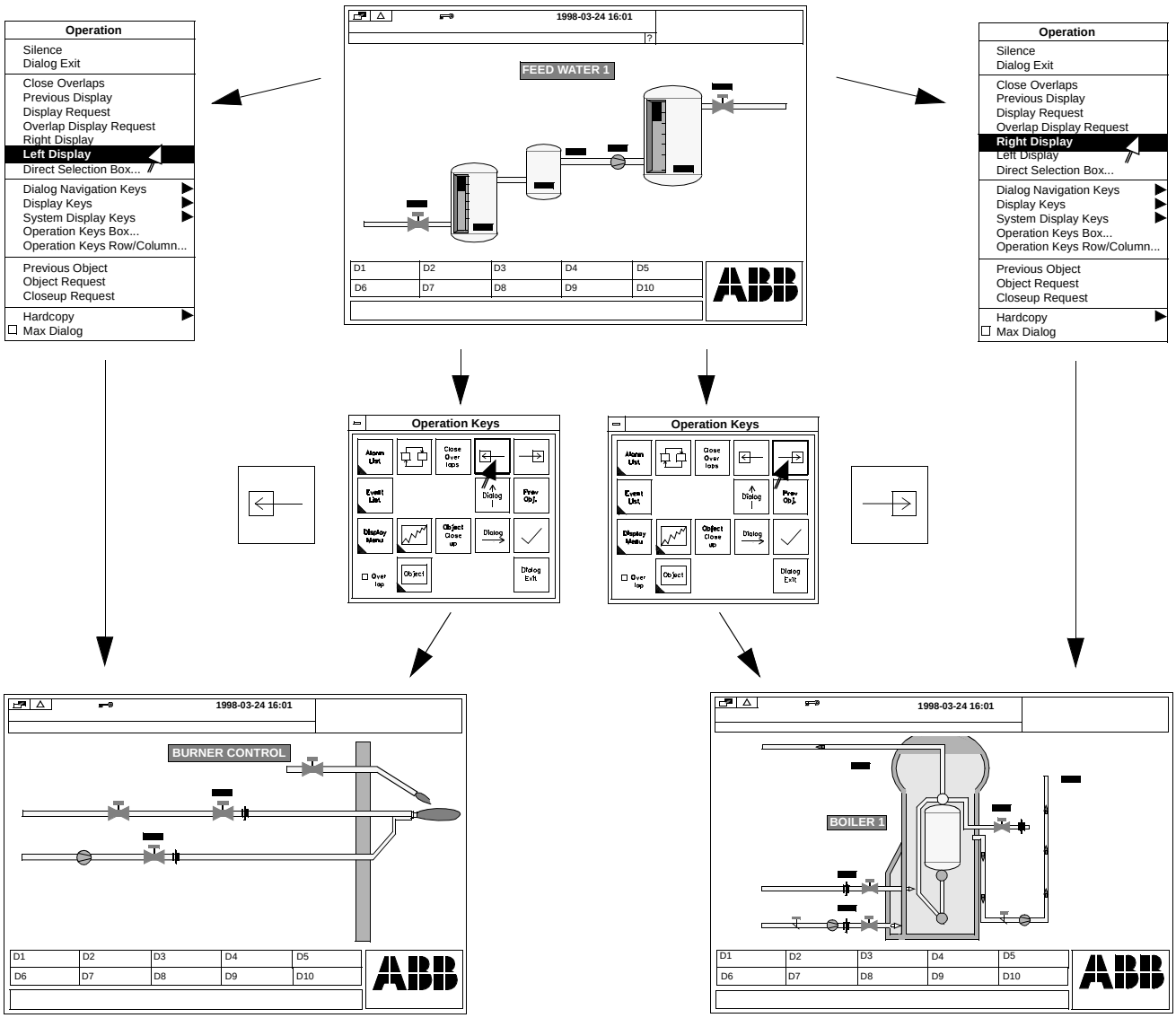


Figure 4-31. Display call-up by paging buttons/items

Base displays can be **linked** together. To call up a linked display, you either click on the **Left Display** or **Right Display** button in the **Operation Keys box** or directly selecting the item Left Display or Right Display in the same **pop-up menu**.

You can also use the **paging** buttons in the **Operation Keys box** to page through a list or a display that consists of several pages.

The **paging** keys are only valid for base displays.

Help Display Call-up

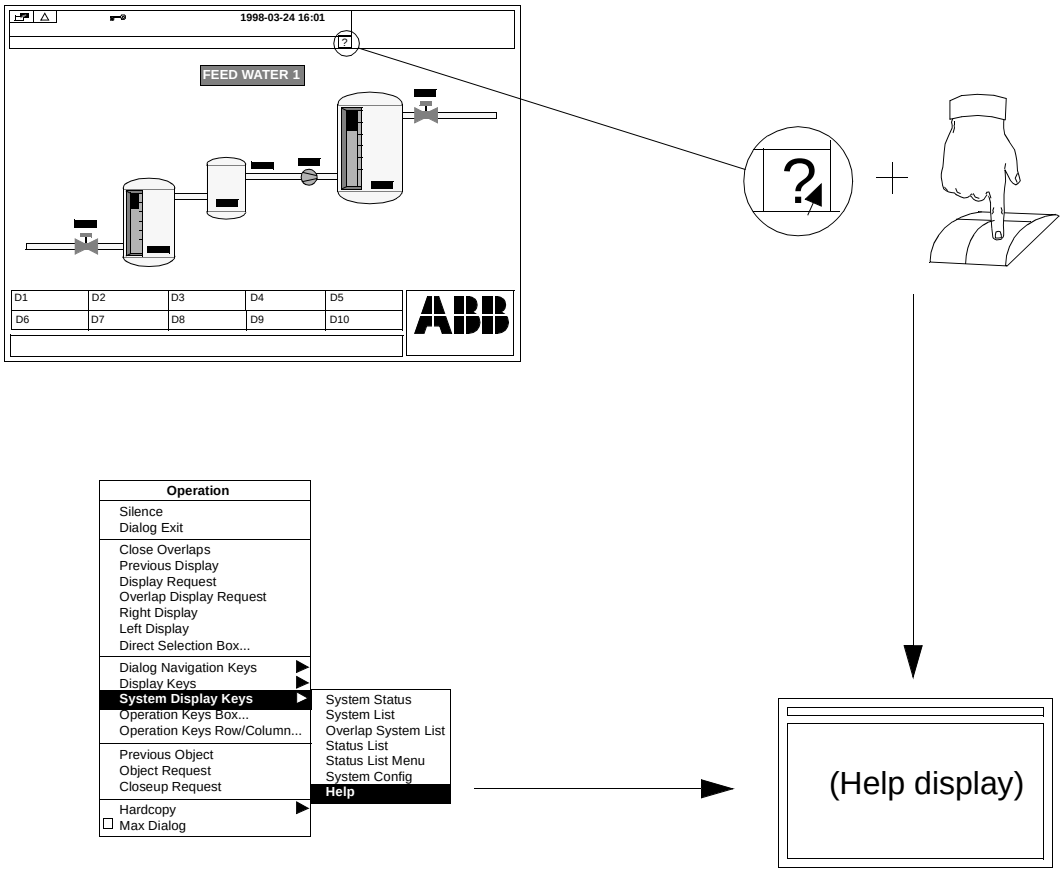


Figure 4-32. Help display call-up

If a **Help display** belongs to the presented display, you call it up as follows:

- Position the cursor on the help symbol in the display title area and click with the select mouse button or select the subitem **Help** from the item **System Display Keys** in the pop-up menu Operation.

Display Request Command

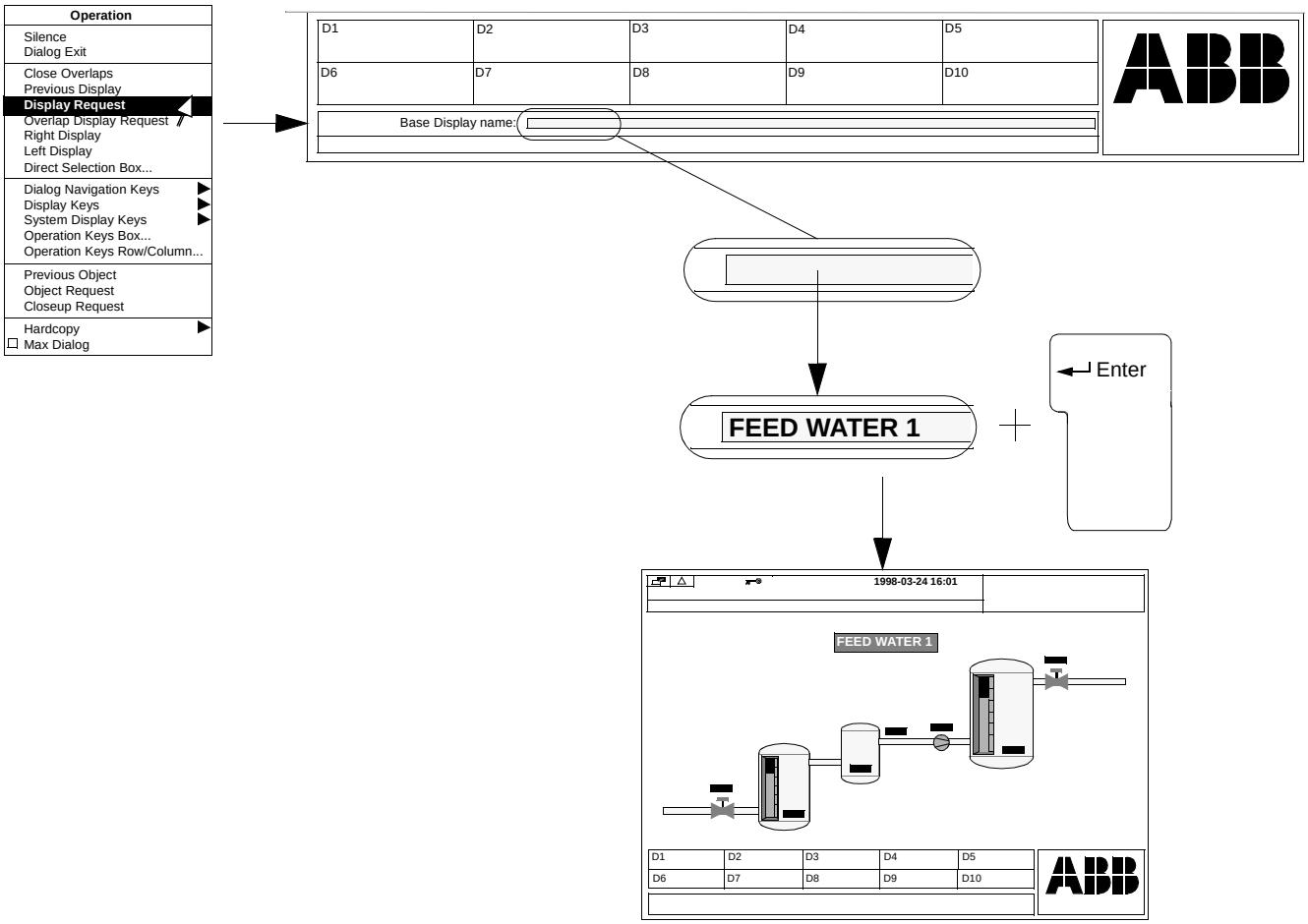


Figure 4-33. Display call-up by display request command - Base display

To call up a **Base Display**, do as follows:

1. Select the item **Display Request** in the **Operation** pop-up menu. (The cursor must be on the presented base display.)

   The text **"Display name:"** is displayed in the **dialog line**.

   The cursor moves to the **input field**.

2. Enter the **display name** in the **input field** and press **<Enter>**.

To call up an **Overlap Display**, do as follows:

1. Select the item **Overlap Display Request** in the **Operation** pop-up menu.

   The text "**Overlap Display name:**" is displayed in the **dialog line**.

   The cursor moves to the **input field**.

2. Enter the **display name** in the **input field** and press **<Enter>**.

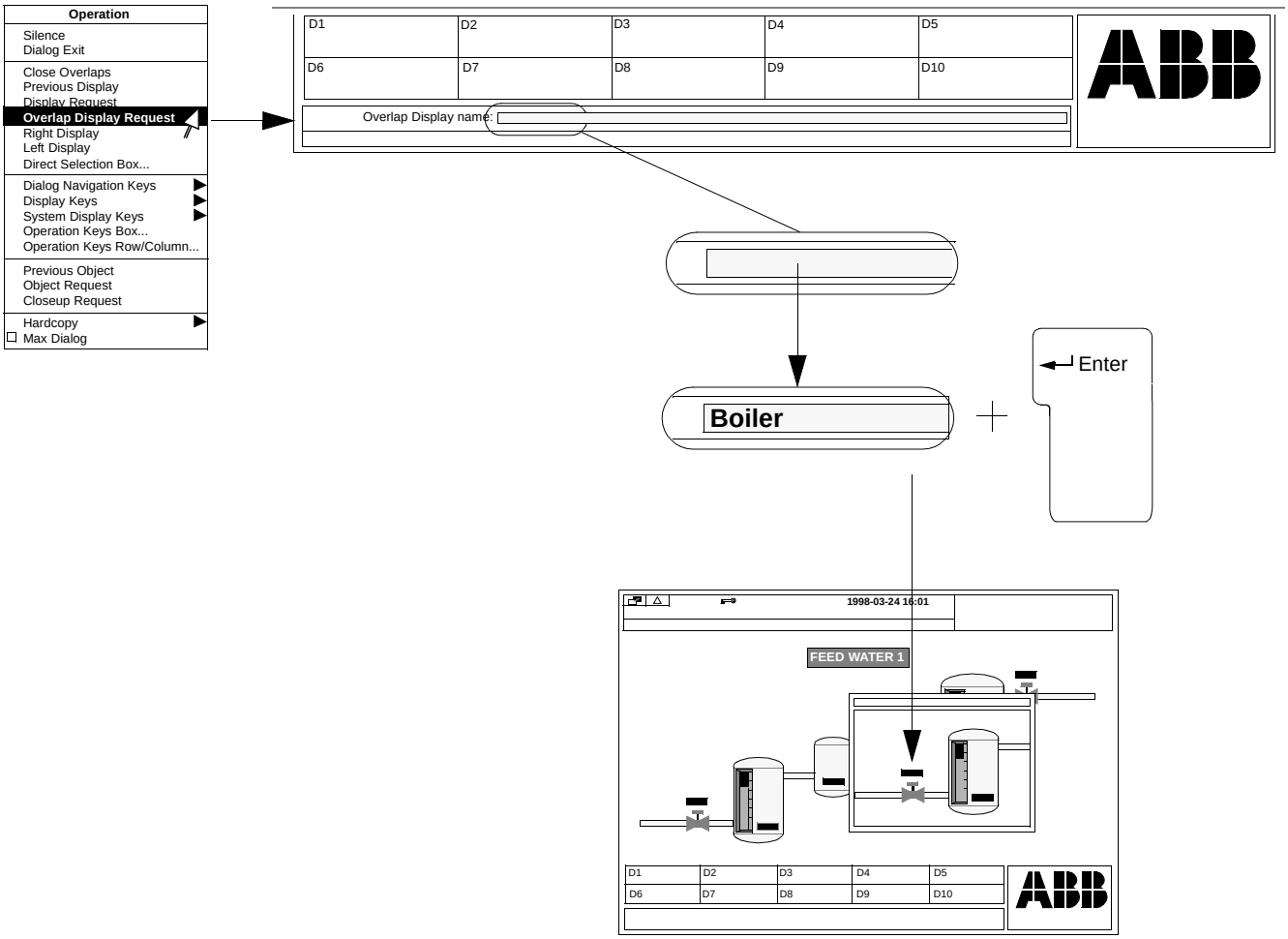


Figure 4-34. Display call-up by display request command - Overlap display

Display Links

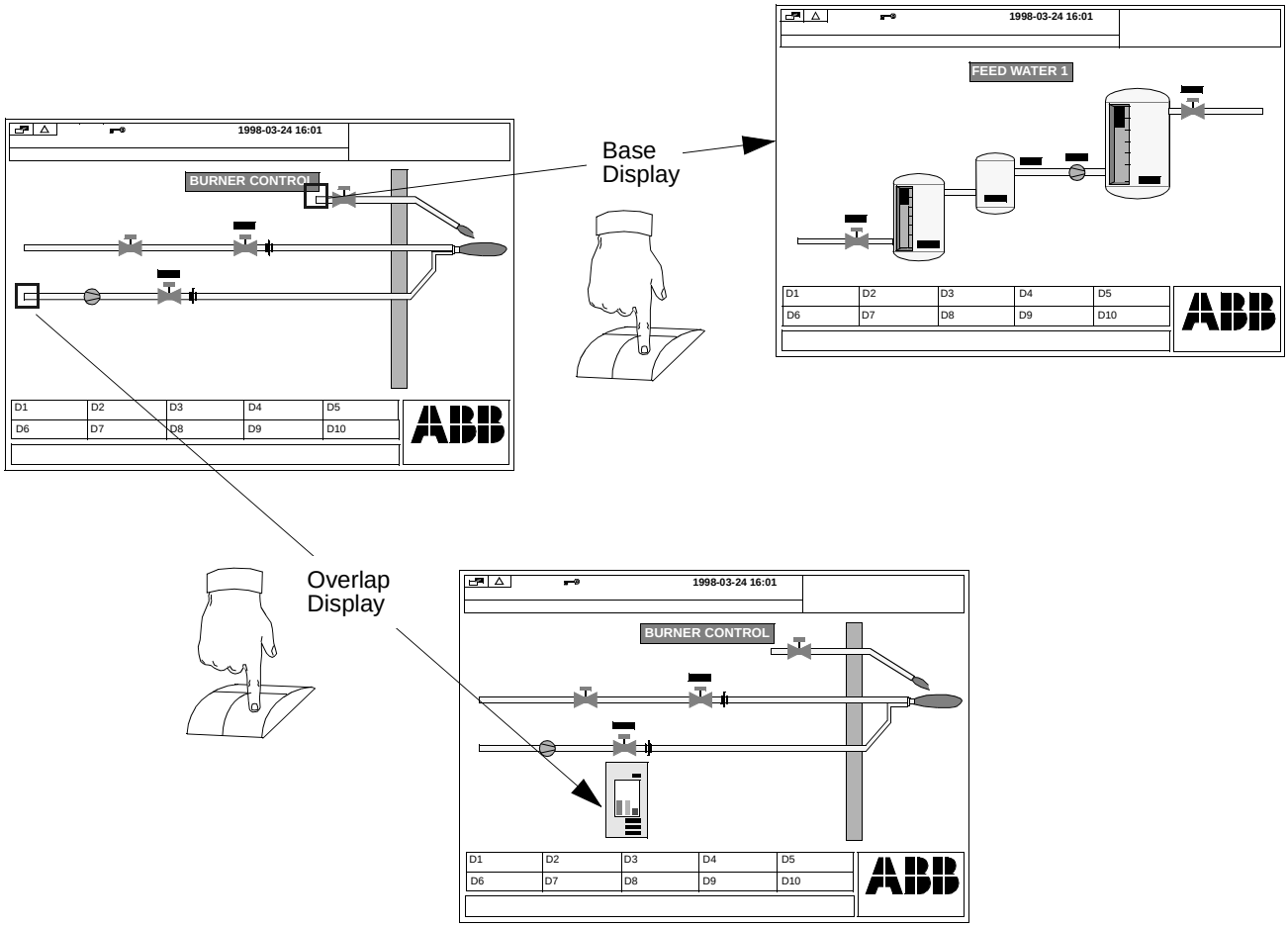


Figure 4-35. Display call-up by display links

A Display Link is a display element in the display that can call up other displays.

To call up a display by a **Display Link**, do as follows:

1. Position the **cursor** on the **display link**.
2. Click with the **select mouse button**.

   The presented display can be either a **Base** display or an **Overlap** display.

Operation Keys Buttons and Pop-up menu Items for System Displays

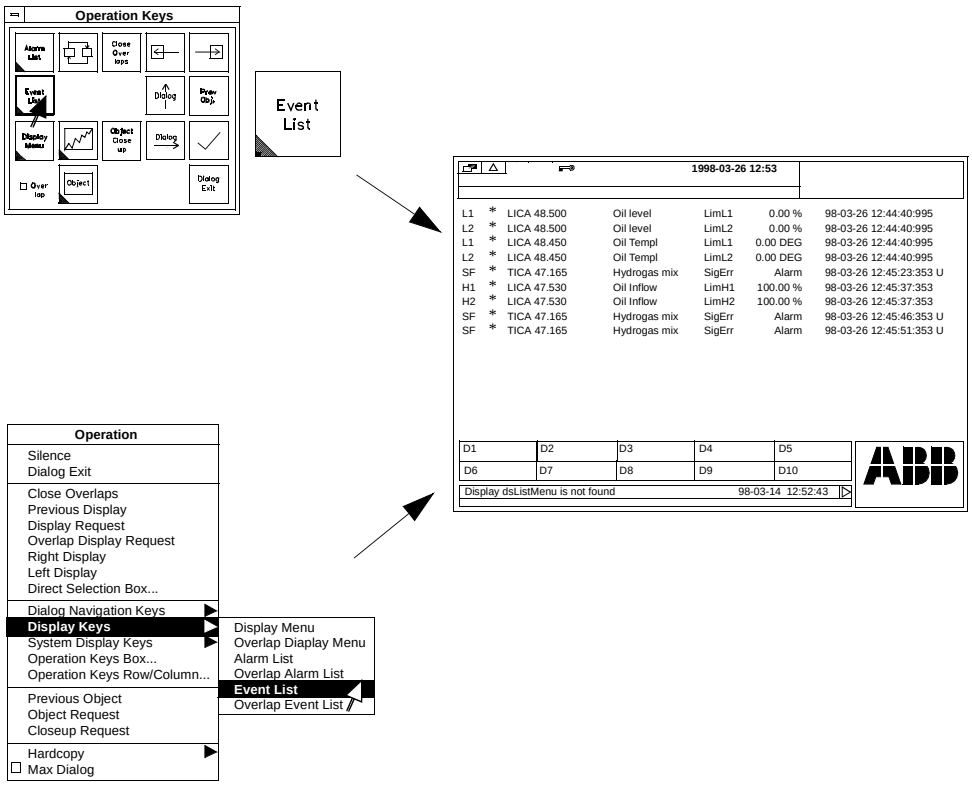

Operation Keys
Event List
1998-03-26 12:53
L1 * LICA 48.500 Oil level LimL1 0.00 % 98-03-26 12:44:40:995
L2 * LICA 48.500 Oil level LimL2 0.00 % 98-03-26 12:44:40:995
L1 * LICA 48.450 Oil Templ LimL1 0.00 DEG 98-03-26 12:44:40:995
L2 * LICA 48.450 Oil Templ LimL2 0.00 DEG 98-03-26 12:44:40:995
SF * TICA 47.165 Hydrogas mix SigErr Alarm 98-03-26 12:45:23:353 U
H1 * LICA 47.530 Oil Inflow LimH1 100.00 % 98-03-26 12:45:37:353
H2 * LICA 47.530 Oil Inflow LimH2 100.00 % 98-03-26 12:45:37:353
SF * TICA 47.165 Hydrogas mix SigErr Alarm 98-03-26 12:45:46:353 U
SF * TICA 47.165 Hydrogas mix SigErr Alarm 98-03-26 12:45:51:353 U
D1 D2 D3 D4 D5
D6 D7 D8 D9 D10
Display dsListMenu is not found 98-03-14 12:52:43
Operation
Silence
Dialog Exit
Close Overlaps
Previous Display
Display Request
Overlap Display Request
Right Display
Left Display
Direct Selection Box...
Dialog Navigation Keys
Display Keys
System Display Keys
Operation Keys Box...
Operation Keys Row/Column...
Previous Object
Object Request
Closeup Request
Hardcopy
Max Dialog
Display Menu
Overlap Diaplay Menu
Alarm List
Overlap Alarm List
Event List
Overlap Event List

Figure 4-36. Display call-up for an event list (example)

You can call up a system display either by clicking on a button in the **Operation Keys box** or directly select a subitem from the **pop-up menu Operation**.

Only the following **Operation Keys** buttons are assigned to system displays.



Figure 4-37. Operation Keys buttons assigned to system displays

All system displays can be selected as subitems from the items **Display Keys** and **System Display Keys** in the **pop-up menu Operation**.

.

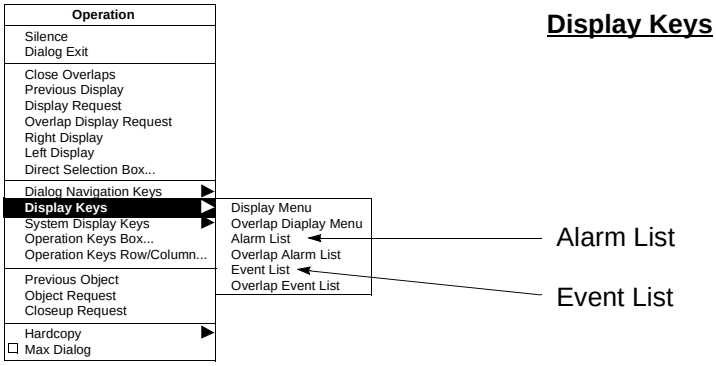


Figure 4-38. Display Keys subitems in the pop-up menu Operation

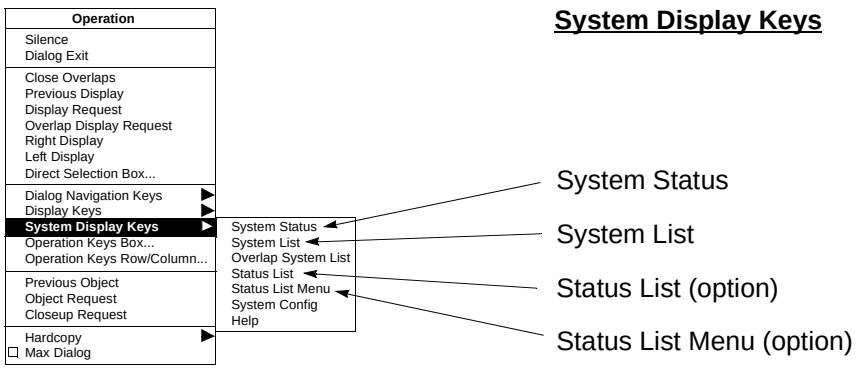


Figure 4-39. System Display Keys subitems in the pop-up menu Operation

4.2.1.3 Methods for Process Objects

Mark and Select Process Object

You can select any process object for manual control. Selection gives you exclusive access to a selected object, which means that no other operator can intervene as long as you have it selected.

You can also get information about an object without selecting it. You can mark an object in a Process Display or a list by positioning the cursor on the object symbol or object name. The marking means that you can request information, for example, the object display or object trend, but cannot control the object. A marked object is indicated by the corners of a rectangle surrounding the symbol.

If the AdvaCommand Process Sectioning option is installed, an authority check is made. This means that you can only select and control the objects within the sections you are allowed to operate.

You **select** a process object in any of the following ways:

- Position cursor on the object symbol in the display and click with the **select mouse button**.
- Enter the object name.
- Position the cursor on the object name presented on the latest unacknowledged alarm line and click with the **select mouse button**.
- Position cursor on the object name in the Alarm List and click with the **select mouse button**.
- Either click on the **Previous Object** button in the **Operation Keys box** or directly select the item **Previous Object** in the **Operation** pop-up menu.

The selection is **confirmed** when:

- The object symbol has a **Select area** which is a **white frame around the object**.
- The name, status and value of the object are presented in the dialog line.
- A closeup display of the object is displayed in the object closeup area.
- The dialog commands available for the object are presented in the dynamic function key area.

Select Object in Display

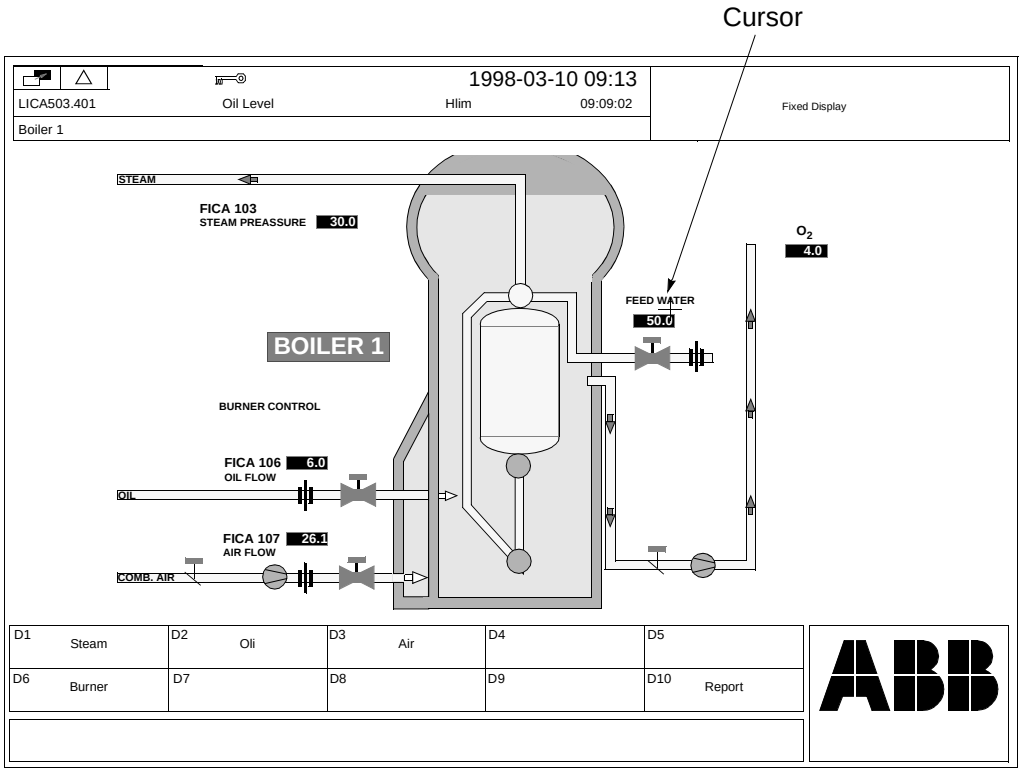


Figure 4-40. Select object in display

To position the cursor on the object, do as follows:

1. Call up a **group display** or a **Process Display**.

   The dialog for the display is presented.

2. Position the **cursor** on the **object name** in a group display or on the **object symbol** in a Process Display.

Click with the **select mouse button**.

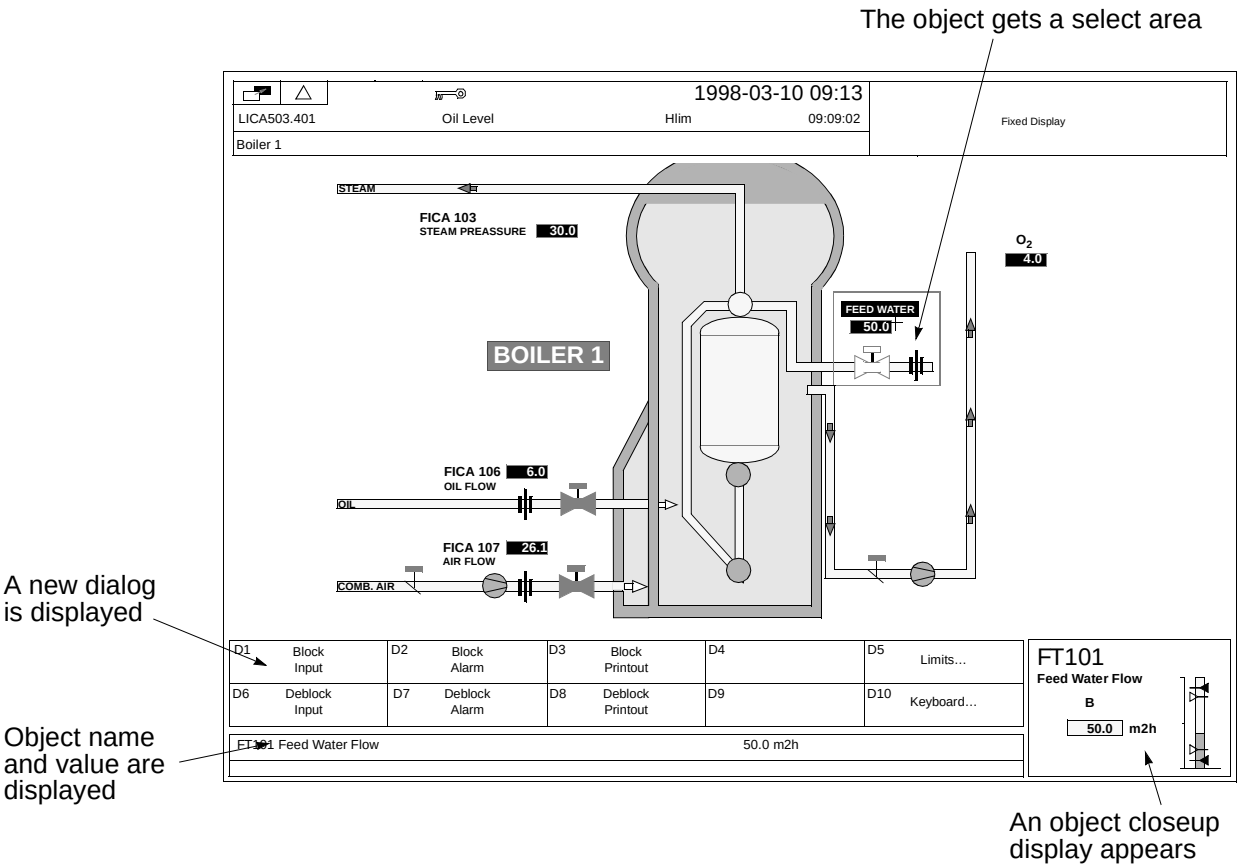


Figure 4-41. Selection of the object

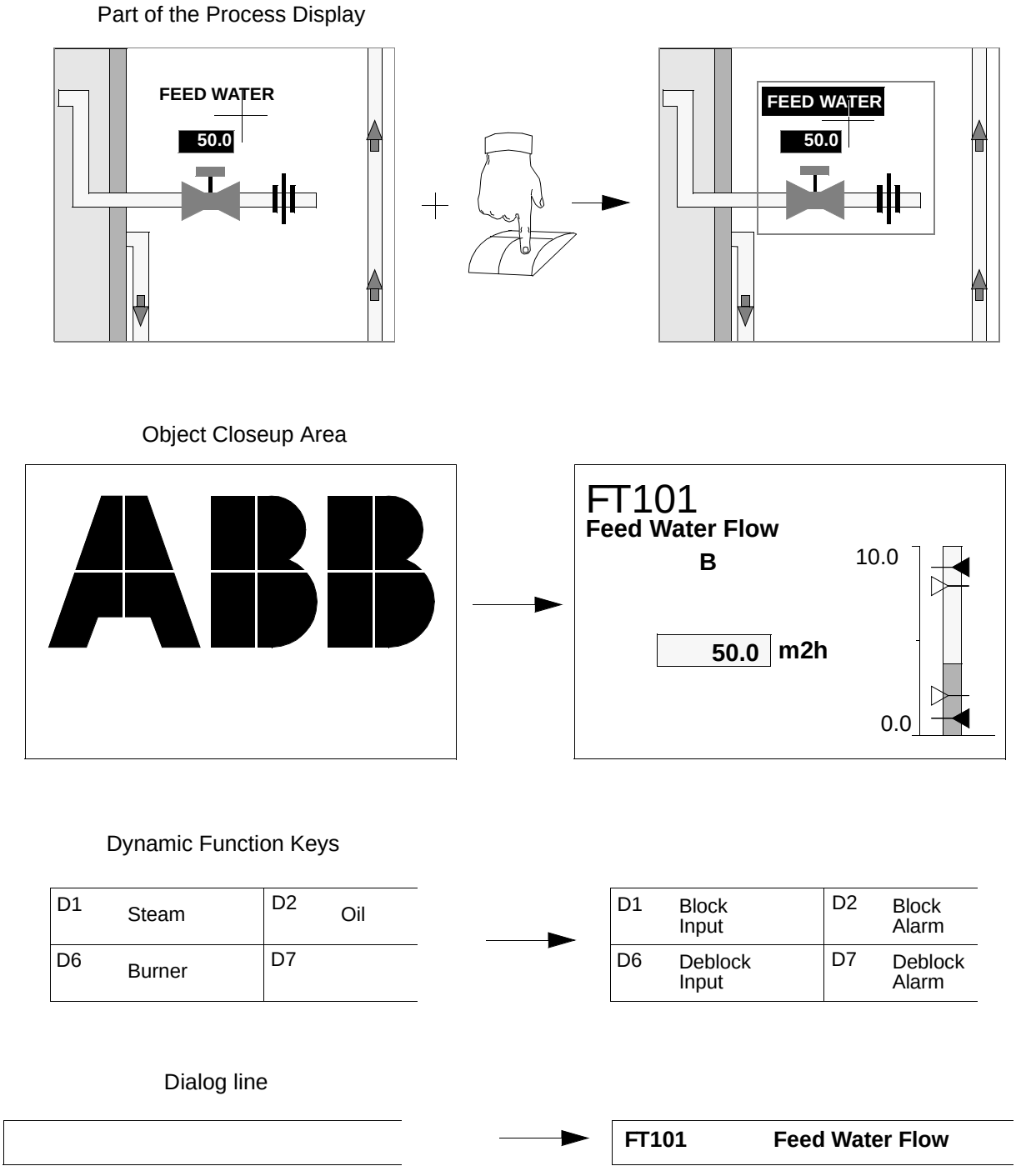


Figure 4-42. Changes in the display when an object is selected

Select Object by Name

Since all process objects have unique names in the system, you can select an object by entering its name, as follows:

1. Select the item **Object Request** in the **Operation** pop-up menu.

   The cursor moves to the input field.

2. Enter the **object name** in the **input field** and press **<Enter>**.

   The object name and its dialog, as well as the object closeup, are displayed. You can now control the object.

Use of the Previous Object key

You can call back the previously selected object either by clicking on the **Previous Object** button in the **Operation Keys box** or directly selecting the item **Previous Object** in the **Operation** pop-up menu.

Methods to Deselect Process Objects

When you have finished your control activities for a particular process object, you confirm this by:

- Clicking on the **Dialog Exit** button in the **Operation Keys box** or directly selecting the item **Dialog Exit** in the **Operation** pop-up menu or selecting a **new object**.

If you forget to cancel an object selection, it is **automatically** cancelled after approximately one minute.

NOTE

Calling up a new base display will automatically cancel the current object selection.

Frequently Used Operations

Some frequently used operations are described in this section:

- On/Off operations
- Entry of analog values
- Control mode changes
- Function blocking

On/Off Operation

Example:

1. Call up a **Process Display**. The display contains an object with **On/Off functionality**.
2. Select the **process object** using any of the alternatives given in the section above.
3. Select the subitem **On** (Open) or **Off** (Close) from the **Object Control** item in the pop-up menu **Object Handling** or

   press the **dynamic function keys**, F1 (Open) or F6 (Close) or

   click on the corresponding **screen buttons** as follows:

   – Click on **D10** (Keyboard…).

     A new dialog is displayed. It corresponds to the dynamic function keys on the keyboard.

   – Click on **D1** (Open).

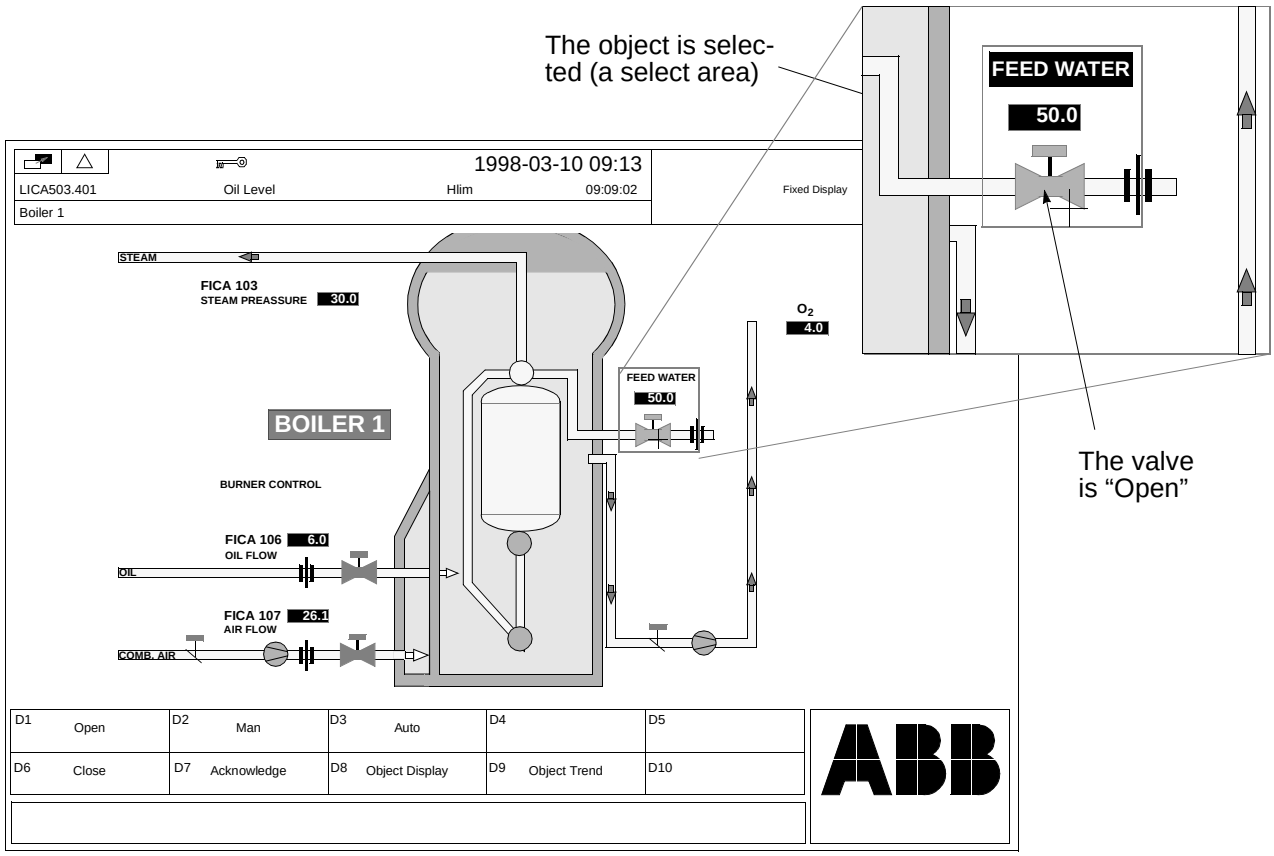


Figure 4-43. Process display with a selected process object

4. Click on the **Dialog Exit** button in the **Operation Keys box** or directly select the item **Dialog Exit** in the **Operation** pop-up menu to deselect the object.

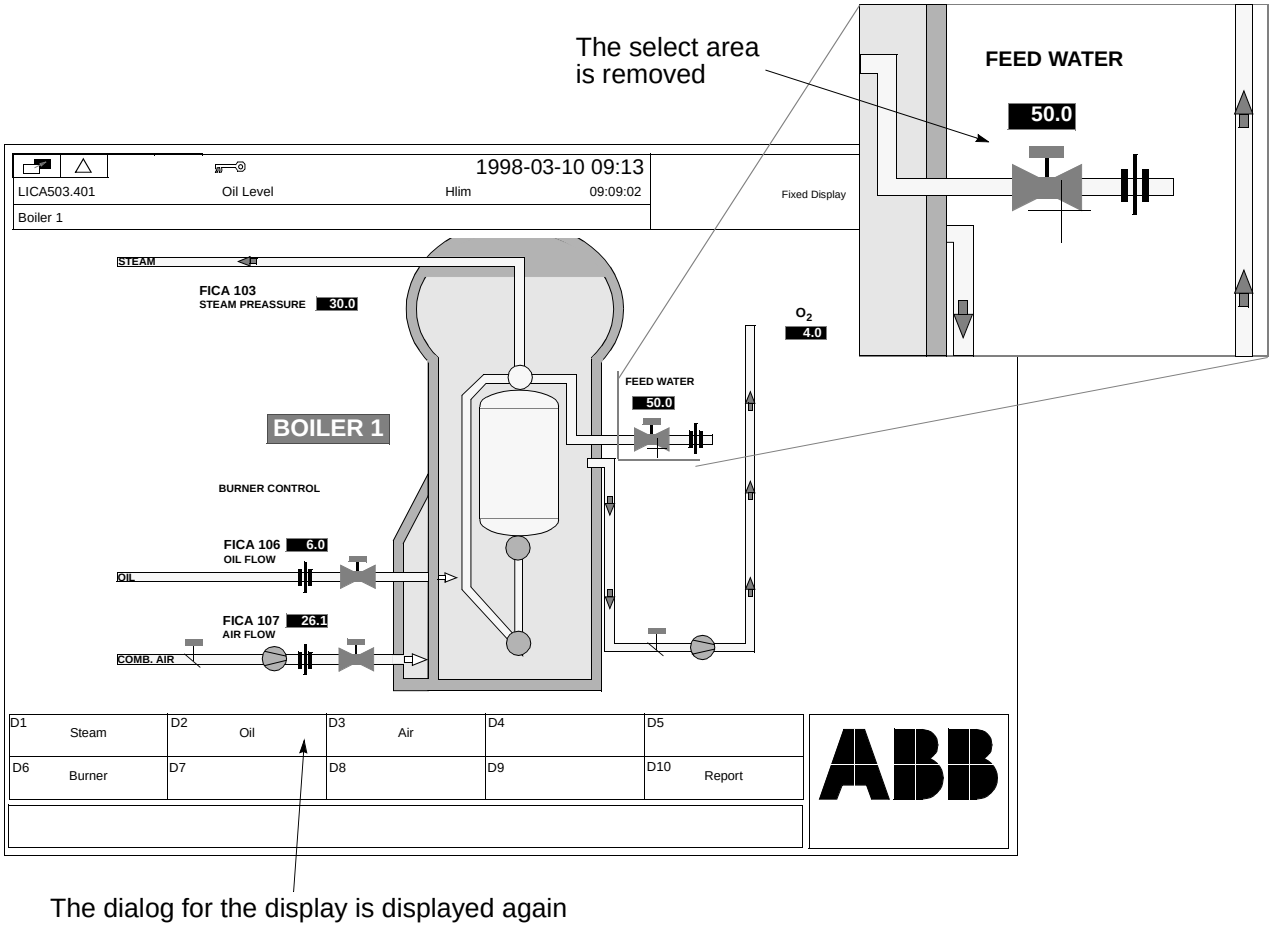


Figure 4-44. Process display with no object selected

Entry of Analog Values

The following types of analog values exist:

- Alarm limits for measured values, output signals and set points
- Set points
- Manual output signals
- Control parameters
- Various analog values for sequences

Example:

1. Call up a **Process Display**. The display contains an object with an analog value.
2. Select the **process object** according to any of the alternatives given in the section above.

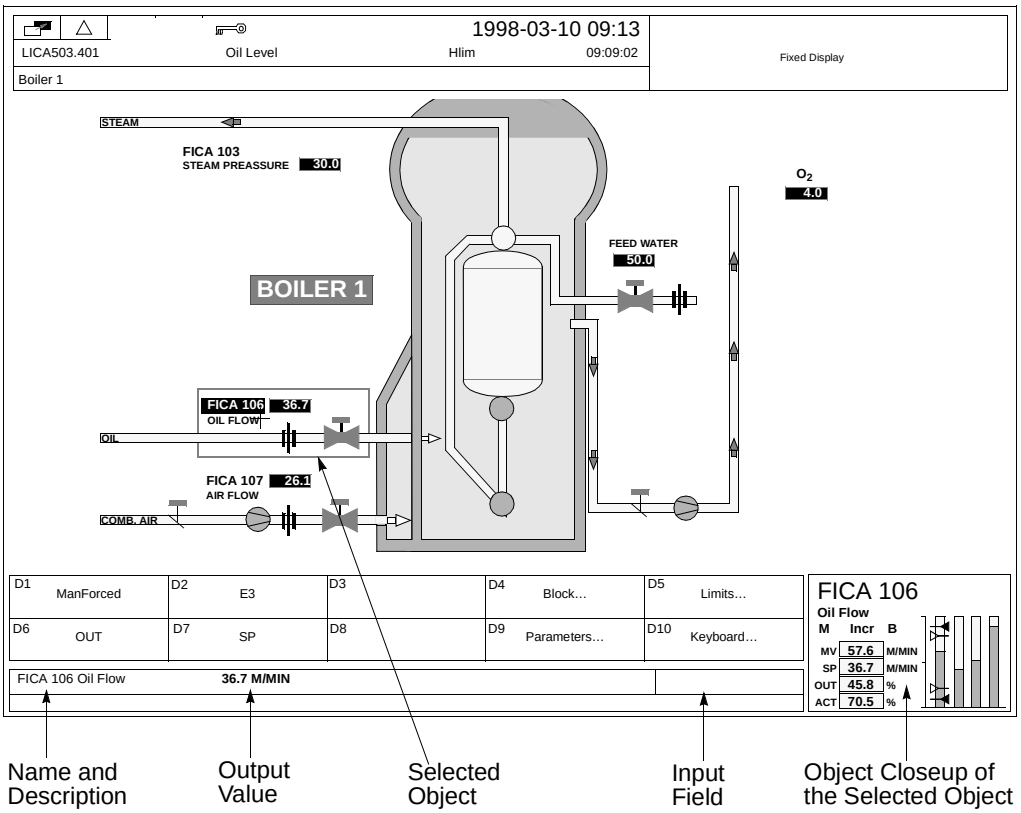


Figure 4-45. Entry of analog values (Max dialog is valid)

3. Click on **D7** (SP).

   The present **setpoint value** (instead of the output value) is shown on the **dialog line**.

4. Enter a **new value** in the **input field** and press **<Enter>** or select one of the subitems **Small Increase, Large Increase, Small Decrease** or **Large Decrease** from the **Object Control** item in the pop-up menu **Object Handling**.

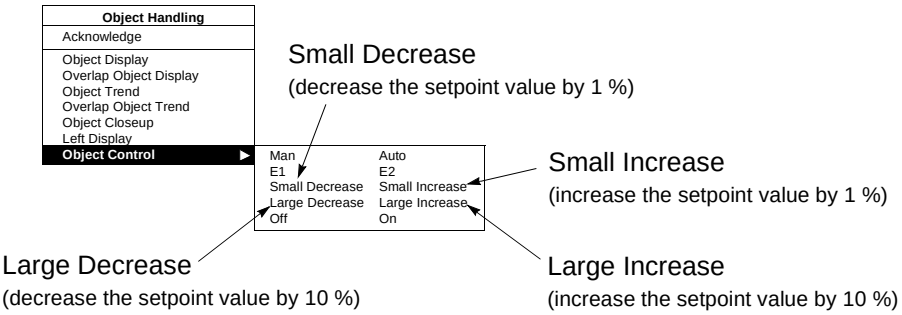


Figure 4-46. Increase/Decrease items in the pop-up menu Object Handling

   The new set point value is shown on the dialog line.

5. Click on the **Dialog Exit** button in the **Operation Keys** box or directly select the item **Dialog Exit** in the **Operation** pop-up menu to deselect the process object.

Control Mode Change

The control mode is a description of how a process object is controlled. The two most common modes are "manual" (**Man**) and "automatic" (**Auto**), but many object types, for example PIDCON, have other control modes.

Example:

1. Call up a **Process Display**. The display contains an object that can be run in different modes, for example, a PIDCON.
2. Select the **process object** using any of the alternatives given in the section above.
3. Change the mode to **manual mode** by selecting the subitem **Man** from the **Object Control** item in the pop-up menu **Object Handling** or by using the dynamic function keys/screen buttons as follows:

   a. Press **F10** or click on the screen button D10 (Keyboard…).

      A new dialog is displayed. It corresponds to the keys on the keyboard.

   b. Press **F2** or click on the screen button D2 (Man).

      The changed mode is shown in the display.

4. Click on the **Dialog Exit** button in the **Operation Keys** box or directly select the item **Dialog Exit** in the Operation pop-up menu to deselect the process object.

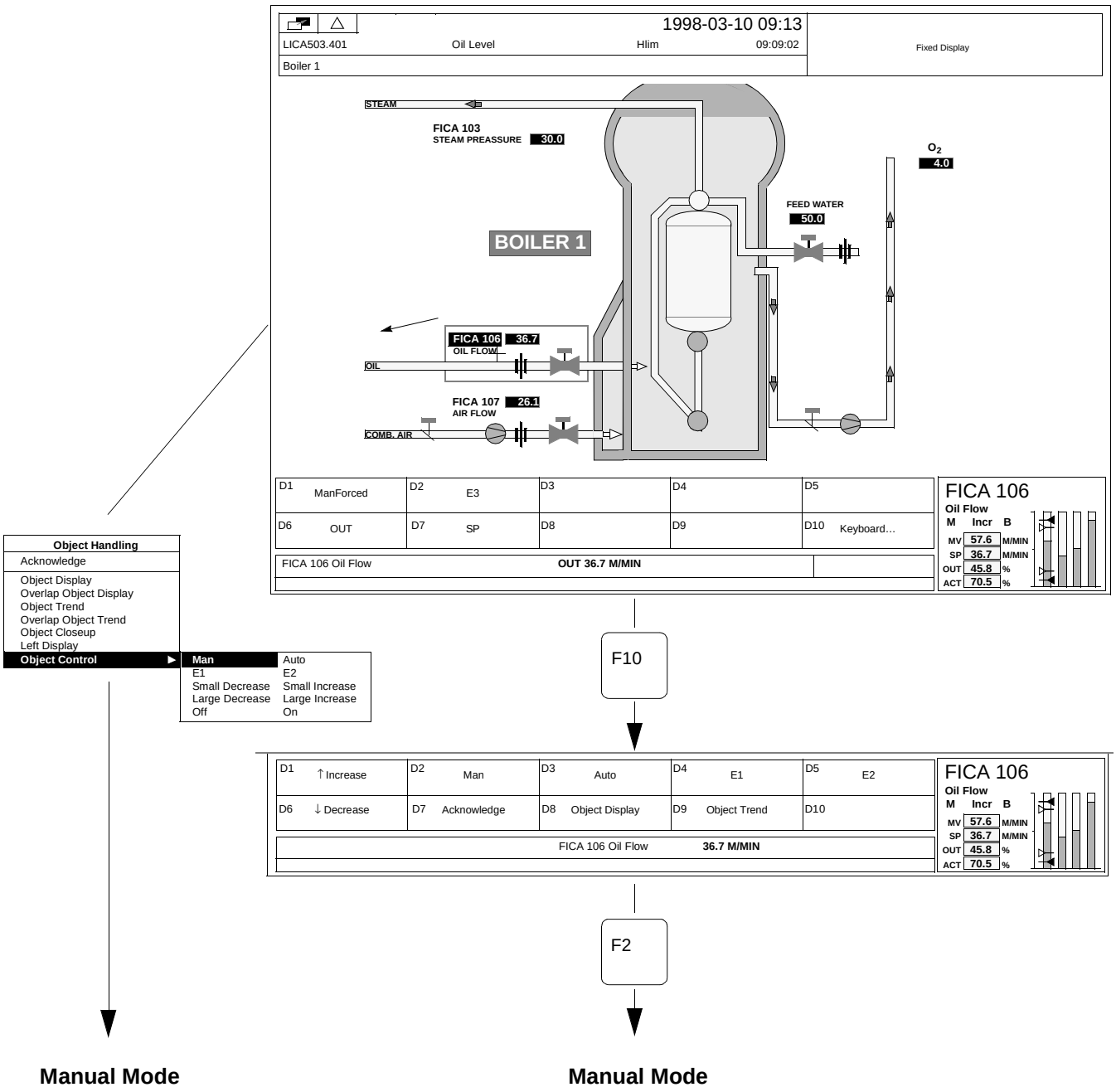


Figure 4-47. Control mode change (Min dialog is valid)

Blocking/Deblocking

Use the **blocking/deblocking** functions for both control and supervision, for example:

- Blocking incoming process signals, eventually followed by manual entry of a simulated process value (**Block/Deblock Input**).
- Blocking the outgoing process signals to the process (**Block/Deblock Output**).
- Blocking alarm handling in the Alarm List (**Block/Deblock Alarm**).
- Blocking event printout on printers (**Block/Deblock Printer**).

Use the blocking functions only in a carefully considered manner. These functions are only accessible from the Max Dialog.

Example:

1. Call up a **group display**. The display contains an object with blocking/deblocking functions, for example, an **AI**.
2. Select the **process object** using any of the alternatives given in the section above.

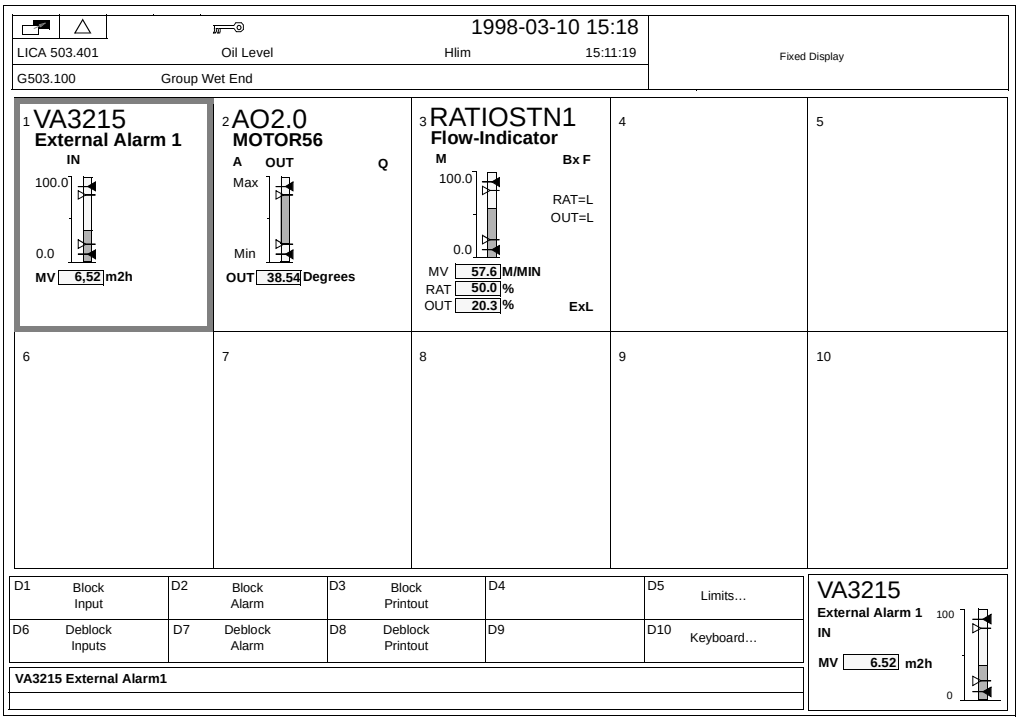


Figure 4-48. Blocking/deblocking (Max dialog is valid)

3. Press **F1** or click on the screen button D1 (Block Input). Max Dialog is required.

   A yellow **IN**, indicating Status Blocked, is displayed below the object description in the display.

4. Click on the **Dialog Exit** button in the **Operation Keys** box or directly select the item **Dialog Exit** in the Operation pop-up menu to deselect the object.

4.2.2 AdvaCommand Alarm and Event

4.2.2.1 Alarm and Event Handling

When an abnormal situation occurs in the process or in the system itself, it is important that the operator is notified about it to be able to intervene if required. An **alarm** is a special type of event that **must be acknowledged by the operator**.

The event and alarm messages are presented in different types of lists. The following lists are available:

- Process Alarm List
- Process Event List
- System List

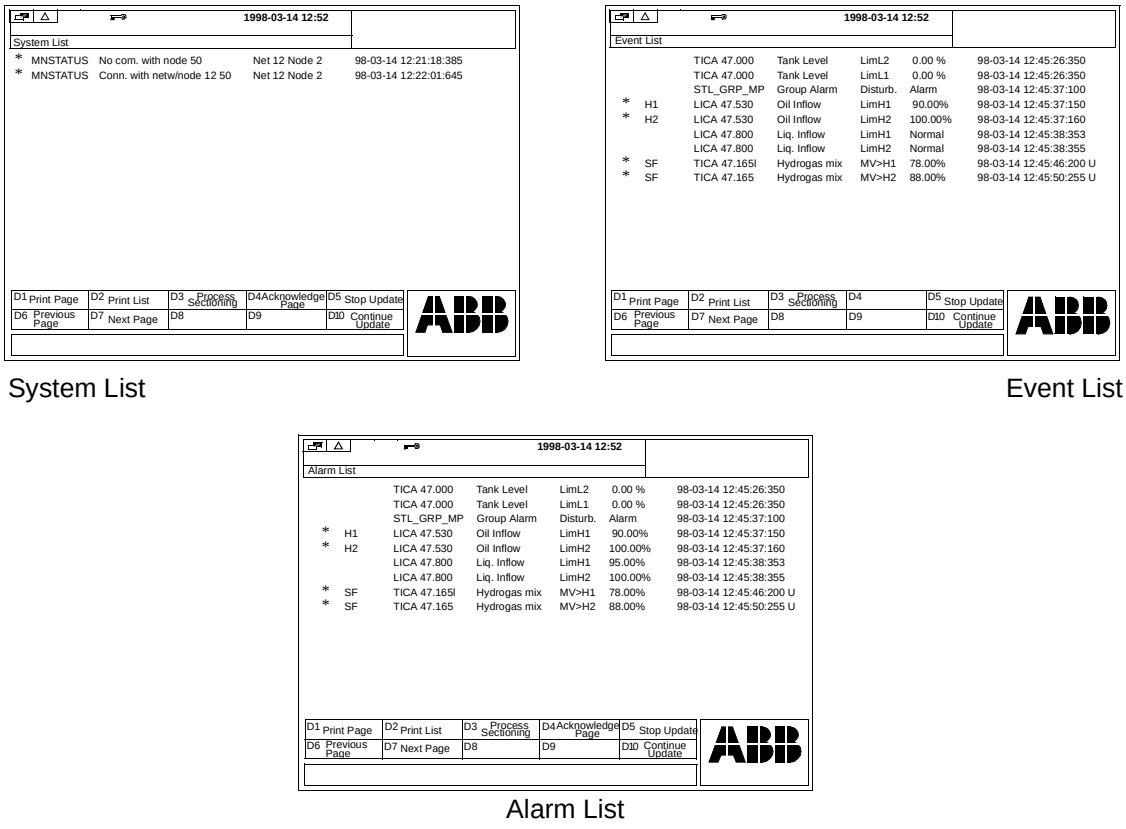

1998-03-14 12:52
System List
* MNSTATUS No com. with node 50 Net 12 Node 2 98-03-14 12:21:18:385
* MNSTATUS Conn. with netw/node 12 50 Net 12 Node 2 98-03-14 12:22:01:645
D1 Print Page
D2 Print List
D3 Process Sectioning
D4 Acknowledge Page
D5 Stop Update
D6 Previous Page
D7 Next Page
D8
D9
D10 Continue Update
1998-03-14 12:52
Event List
TICA 47.000 Tank Level LimL2 0.00 % 98-03-14 12:45:26:350
TICA 47.000 Tank Level LimL1 0.00 % 98-03-14 12:45:26:350
STL_GRP_MP Group Alarm Disturb. Alarm 98-03-14 12:45:37:100
* H1 LICA 47.530 Oil Inflow LimH1 90.00% 98-03-14 12:45:37:150
* H2 LICA 47.530 Oil Inflow LimH2 100.00% 98-03-14 12:45:37:160
LICA 47.800 Liq. Inflow LimH1 Normal 98-03-14 12:45:38:353
LICA 47.800 Liq. Inflow LimH2 Normal 98-03-14 12:45:38:355
* SF TICA 47.165I Hydrogas mix MV>H1 78.00% 98-03-14 12:45:46:200 U
* SF TICA 47.165 Hydrogas mix MV>H2 88.00%
98-03-14 12:45:50:255 U
Event List
1998-03-14 12:52
Alarm List
TICA 47.000 Tank Level LimL2 0.00 % 98-03-14 12:45:26:350
TICA 47.000 Tank Level LimL1 0.00 % 98-03-14 12:45:26:350
STL_GRP_MP Group Alarm Disturb. Alarm 98-03-14 12:45:37:100
* H1 LICA 47.530 Oil Inflow LimH1 90.00% 98-03-14 12:45:37:150
* H2 LICA 47.530 Oil Inflow LimH2 100.00% 98-03-14 12:45:37:160
LICA 47.800 Liq. Inflow LimH1 95.00% 98-03-14 12:45:38:353
LICA 47.800 Liq. Inflow LimH2 100.00% 98-03-14 12:45:38:355
* SF TICA 47.165I Hydrogas mix MV>H1 78.00% 98-03-14 12:45:46:200 U
* SF TICA 47.165 Hydrogas mix MV>H2 88.00% 98-03-14 12:45:50:255 U
Alarm List

Figure 4-49. Examples of system, alarm and event list presentation

The **Event List** contains up to 1000 events. An event can be an alarm or just an event. The list is **circular**, and when the list is full, the next event overwrites the oldest event that is not an alarm. Events are always removed from the event list before alarms.

NOTE

You cannot acknowledge an alarm in an event list.

The **Alarm List** contains up to 500 alarms. The list is also circular, but an alarm is not removed from the list until it is acknowledged either by the operator or automatically by the system.

When an alarm is automatically acknowledged and removed from the Alarm List due to overflow, it is also removed from the Event List.

The **System List** contains up to 100 **control system error** messages, indicating faults or other changes of state in the control system.

Alarm Indication

The process alarms indication is presented in different ways:

- In the **latest unacknowledged alarm line** located in the screen header
- in a **display**, if the relevant object is presented in the display when the alarm is active. The status indication of the object is red flashing until the alarm is acknowledged, and then steady red as long as the alarm condition persists.
- in the alarm and event lists
- acoustic signal in the keyboard (optional)

List Presentation

You call up a list either by clicking on one of the **Alarm List** and **Event List** buttons in the **Operation Keys box** or directly select one of the subitems from the **pop-up menu Operation**. **Alarm List** and **Event List** can be selected as subitems from the item **Display Keys** and System List from the item **System Display Keys**.

To get a list as an overlap display just select the overlap item for each list from the same pop-up menu as the base displays (**Overlap Alarm List** and **Overlap Event List**).

The lists have similar layouts. The Alarm List as a base display is illustrated below:

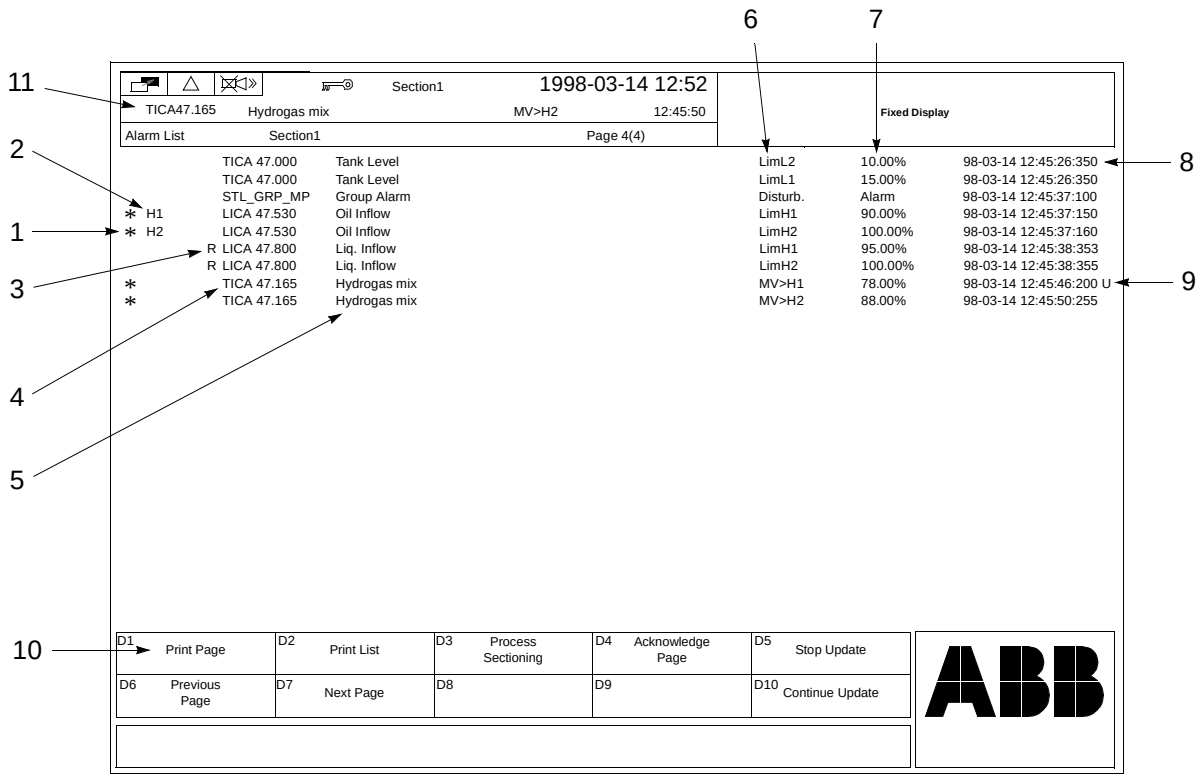


Figure 4-50. Alarm list layout

1. Indication of unacknowledged alarm (red flashing *).
2. Property concerned in the data base, for example passage of an alarm limit.
3. Indication of blocking of further reporting of repetitive alarms from a particular object (R).
4. Name of signal/object.
5. Description of signal/object.
6. Description of the error, for example Limit exceeded.
7. Description of the event/alarm.
8. Time tagging of event (year, day, hour, minute, second and 1/1000 second).
9. Indication of uncertain time tagging (U).
10. Labels for the dynamic function keys.
11. Latest unacknowledged alarm line

The dynamic function key **F3**/screen button D3 (Process Sectioning) is only available if the software option Process Sectioning is included in the system.

The lists have no dynamic function keys when they are presented as overlap displays. To get the dynamic function keys you must select the display. You do this by position the cursor in the overlap display and click with the **select mouse button**. The list gets a white frame indicating it is selected and that the dynamic function keys belong to the list.

Acknowledge a Process Alarm from the Alarm List

To acknowledge a **process alarm** from the **Alarm List**, do as follows:

1. Press **F5** or click on the screen button D5 (Stop Update).

   The list is framed in yellow to indicate that the updating of the list is stopped. Stop Update stays armed as long as the list is stopped.

   The white frame of the selected overlap list turns yellow when the updating is stopped. An overlap list which is stopped but not selected has a yellow dotted frame.

2. **Move** the **cursor** to the desired line using the mouse.

3. Select the alarm line with a **mouse click**.

   A selected list line is displayed with a **different background color**.

		TICA 47.000	Tank Level	LimL2	100.00%	98-03-14 12:45:26:350
		TICA 47.000	Tank Level	LimL1	15.00%	98-03-14 12:45:26:350
		STL_GRP_MP	Group Alarm	Disturb.	Alarm	98-03-14 12:45:37:100
*	H1	LICA 47.530	Liq. Inflow	LimH1	90.00%	98-03-14 12:45:37:150
*	H2	LICA 47.530	Liq. Inflow	LimH2	100.00%	98-03-14 12:45:37:160
	R	LICA 47.800	Oil Inflow	LimH1	95.00%	98-03-14 12:45:38:353
*		* LICA 47.800	Oil Inflow	LimH2	100.00%	98-03-14 12:45:38:355
*		TICA 47.165l	Hydrogas mix	MV>H1	78.00%	98-03-14 12:45:46:200 U
*	H	TICA 47.165	Hydrogas mix	MV>H2	88.00%	98-03-14 12:45:50:255

Figure 4-51. Selected list line

From a selected line, you can call up the **object display** or **object trend display** by either clicking on the **Object Display** or **Object Trend** button in the **Operation Keys box** or by selecting the item **Object Display** or **Object Trend** in the pop-up menu **Object Handling**. Note that the process object is not selected!

4. Either click on the **Acknowledge** (√) button in the **Operation Keys box** or select the item **Acknowledge** in the pop-up menu **Operation**.

   The flashing ***** -marking disappears.

   You select the process object by pressing the **select mouse button** on the selected line a second time. Then you get the **object closeup display** and the **process dialog**.

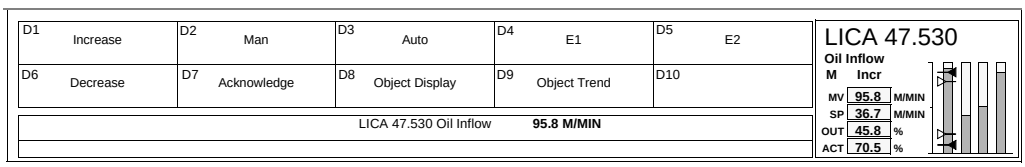


Figure 4-52. Object closeup and the dialog for a selected object

You cancel the selection either by clicking on the **Dialog Exit** button in the **Operation Keys box** or directly selecting the item **Dialog Exit** in the **Operation** pop-up menu or by selecting another process object.

For an overlap list you click on the **Dialog Exit** button in the **Operation Keys box** or directly select the item **Dialog Exit** in the **Operation** pop-up menu to cancel the selection of the list. Then the dialog for the base display is presented instead.

Acknowledge a Page in the Process Alarm List

To **acknowledge all unacknowledged alarms** on the page in the Alarm List, you do the following:

- Press **F4** or click on the screen button D4 (Acknowledge Page).

  The updating is stopped and the flashing * -marking disappears. When there are no more unacknowledged process alarms, the alarm line at the top of the display disappears as well.

Acknowledge a Process Alarm in a Display

To **acknowledge process alarms from other types of displays**, you do as follows:

1. Place the cursor in accordance with the following:
   - **Group displays:** On the object name.
   - **Process Displays:** On the object symbol or the value displays.
   - **Object displays:** Somewhere in the display.
2. Either click on the **Acknowledge** (√) button in the **Operation Keys box** or select the item **Acknowledge** in the pop-up menu **Operation.**

   The flashing of the alarm **stops**.

Priority order for acknowledge

There is a priority order to acknowledge alarms when the alarm list is presented as a base display or an overlap display.

The priority order for acknowledge is as follows:

1. Placement of the cursor.
2. Selected row in the alarm list
3. Selected object

This means that the highest priority is the placement of the cursor. If the cursor is on an unacknowledged alarming process object A, and a row in the alarm list is selected, or another process object B is selected, the process object A will be acknowledged either when you click on the **Acknowledge** button (√) in the **Operation Keys box** or select the item **Acknowledge** in the pop-up menu **Operation**. This is also valid if the object A is in the fix display area.

Different ways to acknowledge alarms

There are also different ways to acknowledge.

If you acknowledge a row in the alarm list, only that specific alarm for the process object is acknowledged. If there are other alarms for the object they remain unacknowledged.

If you click on the **Acknowledge** button in the **Operation Keys box** or select the item **Acknowledge** in the pop-up menu **Operation** with the cursor on an alarming object, all alarms for that object are acknowledged.

Latest Unacknowledged Alarm Line

The latest unacknowledged **process alarm** is always presented in the upper part of the screen, but the alarm cannot be acknowledged from this line. You can only select the object.

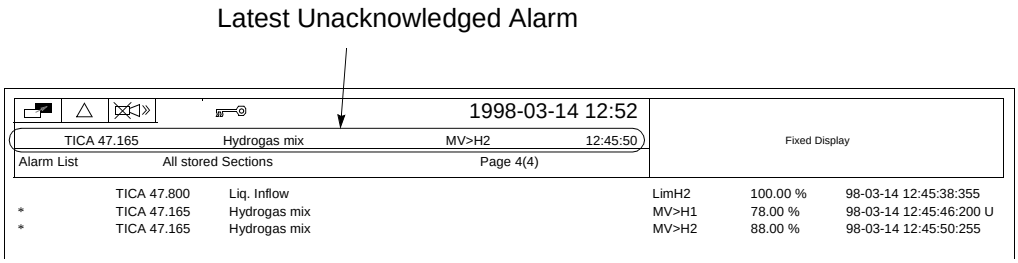

Latest Unacknowledged Alarm
1998-03-14 12:52
TICA 47.165 Hydrogas mix MV>H2 12:45:50
Fixed Display
Alarm List All stored Sections Page 4(4)
TICA 47.800 Liq. Inflow LimH2 100.00 % 98-03-14 12:45:38:355
* TICA 47.165 Hydrogas mix MV>H1 78.00 % 98-03-14 12:45:46:200 U
* TICA 47.165 Hydrogas mix MV>H2 88.00 % 98-03-14 12:45:50:255

Figure 4-53. Latest unacknowledged process alarm

To select the object, do as follows:

- Position the cursor on the line and click with the **select mouse button**.

  The object closeup display and the process dialog for the selected object are displayed.

Acknowledge a System Alarm

An unacknowledged **system alarm** is indicated by a warning triangle that goes red in the icon area in the screen header.

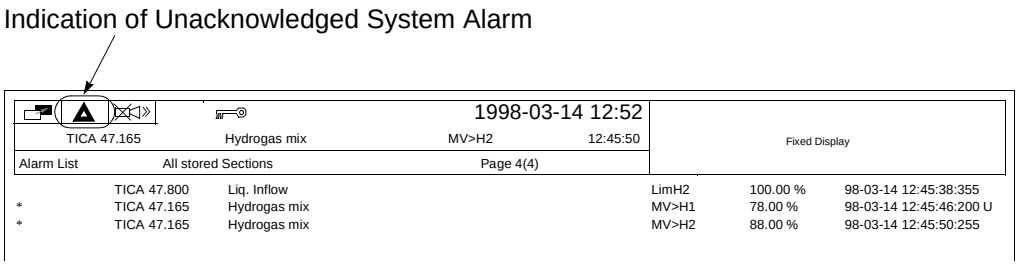

Indication of Unacknowledged System Alarm
1998-03-14 12:52
TICA 47.165 Hydrogas mix MV>H2 12:45:50
Fixed Display
Alarm List All stored Sections Page 4(4)
TICA 47.800 Liq. Inflow LimH2 100.00 % 98-03-14 12:45:38:355
* TICA 47.165 Hydrogas mix MV>H1 78.00 % 98-03-14 12:45:46:200 U
* TICA 47.165 Hydrogas mix MV>H2 88.00 % 98-03-14 12:45:50:255

Figure 4-54. Unacknowledged system alarm indicator

To acknowledge system alarms, do as follows:

1. Position the **cursor** on the **icon**.
2. Click with the **select mouse button**.

   The System Alarm List is displayed. You can also call up the system list by selecting the subitem **System List** from the item System Display Keys in the pop-up menu Operation.
3. Press **F4** or click on the screen button D4 (Acknowledge Page).

   All system alarms on the page are acknowledged.

You can also select a system alarm line and acknowledge that special system alarm.
To acknowledge a single system alarm you must first press **F5** or click on the screen button D5 (Stop Update).

Printouts

You can request printout of the process event list, process alarm list or system list by pressing the dynamic function keys F1 or F2 (screen button D1 or D2).

Press the dynamic function key **F2** or click on the screen button D2 (Print List) to produce **printouts** of the **entire list**.

Press the dynamic function key **F1** or click on the screen button D1 (Print Page) to produce a **printout** of the **page presented on the display screen**.



Figure 4-55. Example of a printout of an alarm list

1. Indication for unacknowledged alarm
2. Indication for persisting alarm
3. Indication of printout on local printer (L)

Paging Keys

Using the dynamic function keys F6 or click on the screen button D6 (Previous Page) or F7 or click on the screen button D7 (Next Page) you can go backwards or forwards in the list. The updating of the list is automatically stopped when you press the keys.

If the **AdvaCommand Process Sectioning** software option is included, you can select which sections of the process are represented in alarms and events storage in the operator station and which are represented in the Alarm and Event Lists. Using the sectioning, you can also call up lists for events and alarms that occur outside the operator's area of responsibility. The request is performed via the Process Sectioning Information Display. For further information, see the manual *AdvaCommand Process Sectioning User's Guide.*

4.2.2.2 External Alarm

In addition to the previously mentioned alarm and event handling, you can select external alarm for the objects at configuration. When the object goes to an alarm status, an external **loudspeaker** is activated.

An external alarm on the loudspeaker can be configured to **one of 15 sounds**, **five continuous sounds** and **10 momentary, time limited, sounds**. The loudspeaker always outputs the sound of the latest external alarm with a configured sound.

A momentary sound is followed by either:

- The sound of a new external alarm.

  or

- If there is no new external alarm, the continuous sound of an earlier external alarm that has not been cancelled.

An audible alarm is indicated by an icon in the screen header.

To silence the alarms position the **cursor** on the **icon** and click on it or select the item **Silence** in the **Operation** pop-up menu.

You then acknowledge the alarm by clicking on the **Acknowledge** button in the **Operation Keys** box or selecting the item **Acknowledge** in the pop-up menu **Operation**.

4.2.2.3 Group Alarm

The status of Group Alarm Objects can be presented in Process Displays by means of pre-defined display elements. The status of each member in the group is presented in the Group Alarm Object display. Through the Group Alarm Processing Dialog, you can interact with Group Alarm Objects.

Process Dialog for Group Alarm

The dialog for Group Alarm Objects uses both **Operation Keys** box buttons**,** items in the pop-up menus and dynamic function keys. Two levels of dialogs are available, Max and Min Dialog. The Min Dialog does not permit any change of parameters. The Max Dialog, which requires authorization, gives access to blocking functions and to configuring the alarm group through the Group Alarm Configuration Window. For a detailed description of the Group Alarm Processing Dialog, please refer to the manual *AdvaCommand User Interface Reference Manual.*

Min Dialog

When no authority is set, the Min Dialog is available. In this mode, the following **Operation Keys** box buttons and items in the pop-up menus are relevant for the Group Alarm Process Dialog:

- By clicking on the **Acknowledge** button in the **Operation Keys** box or selecting the item **Acknowledge** in the pop-up menu **Operation**, you acknowledge the unacknowledged alarm status of the selected Group Alarm Object.
- By clicking on the **Object Display** button in the **Operation Keys** box or selecting the item **Object Display** in the pop-up menu **Object Handling**, you display the Group Alarm Object Display, Page 1.
- By clicking on the **Right Display** button in the **Operation Keys box** or directly selecting the item Right Display in the pop-up menu **Operation** when the Group Alarm Object Display is present on the screen, you display the next page of the Object Display.
- By clicking on the **Left Display** button in the **Operation Keys box** or directly selecting the item Left Display in the pop-up menu **Operation** when the Group Alarm Object Display is present on the screen, you display the previous page of the Object Display.

The dynamic function keys are shown in the figure below.

D1	D2	D3	D4	D5 Configuration
D6	D7 Acknowledge	D8 Object Display	D9	D10

Figure 4-56. Dynamic function keys - Min dialog

- By pressing the dynamic function key **F5** or clicking on the screen button D5 (Configuration), you present the Group Alarm Configuration Window. However, you cannot perform any configuration because this requires authority.
- By pressing the dynamic function key **F7** or clicking on the screen button D7 (Acknowledge), you acknowledge the unacknowledged alarm status of the selected Group Alarm Object.
- By pressing the dynamic function key **F8** or clicking on the screen button D8 (Object Display), you display the Group Alarm Object Display, Page 1.

Max Dialog

When authority is set, the Max Dialog is available. In this mode, the following fixed keyboard keys are relevant for the Group Alarm Process Dialog:

- By clicking on the **Acknowledge** button in the **Operation Keys** box or selecting the item **Acknowledge** in the pop-up menu **Operation**, you acknowledge the unacknowledged alarm status of the selected Group Alarm Object.
- By clicking on the **Object Display** button in the **Operation Keys** box or selecting the item **Object Display** in the pop-up menu **Object Handling**, you display the Group Alarm Object Display, Page 1.
- By clicking on the **Right Display** button in the **Operation Keys box** or directly selecting the item Right Display in the pop-up menu **Operation** when the Group Alarm Object Display is present on the screen, you display the next page of the Object Display.
- By clicking on the **Left Display** button in the **Operation Keys box** or directly selecting the item Left Display in the pop-up menu **Operation** when the Group Alarm Object Display is present on the screen, you display the previous page of the Object Display.
- By pressing **<Page Up>**, you display the next page of the Object Display.

The Top Level dynamic function keys are shown in the figure below.

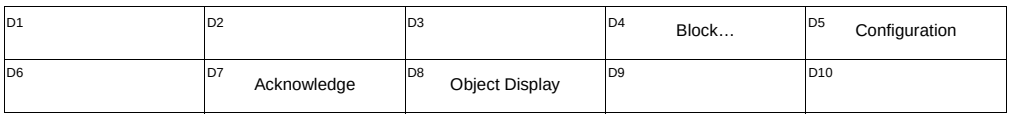


Figure 4-57. Dynamic function keys - Max dialog - Top level

- By pressing the dynamic function key **F4** or clicking on the screen button D4 (Block..), you will bring up the dynamic function keys shown in Figure 4-57 below.

- By pressing the dynamic function key **F5** or clicking on the screen button D5 (Configuration), you present the Group Alarm Configuration Window and you can configure the alarm group.
- By pressing the dynamic function key **F7** or clicking on the screen button D7 (Acknowledge), you acknowledge the unacknowledged alarm status of the selected Group Alarm Object.
- By pressing the dynamic function key **F8** or clicking on the screen button D8 (Object Display), you display the Group Alarm Object Display, Page 1.

The Block dynamic function keys are shown in the figure below.

D1 Block Alarm	D2 Block Printout	D3	D4 Block Object Alarm	D5 Block Object Printout
D6 Deblock Alarm	D7 Deblock Printout	D8	D9 Deblock Object Alarm	D10 Deblock Object Printout

Figure 4-58. Dynamic function keys - Max dialog - D4 Block…

- By pressing the dynamic function key **F1** or clicking on the screen button D1 (Block Alarm), you block Alarm handling for the Group Alarm object.
- By pressing the dynamic function key **F6** or clicking on the screen button D6 (Deblock Alarm), you deblock Alarm handling for the Group Alarm object.
- By pressing the dynamic function key **F2** or clicking on the screen button D2 (Block Printout), you block Alarm printouts for the Group Alarm object.
- By pressing the dynamic function key **F7** or clicking on the screen button D7 (Deblock Printout), you deblock Alarm printouts for the Group Alarm object.
- By clicking with the **select mouse button** when the cursor is on the object, you bring up the top level dynamic key set shown in Figure 4-57.
- By pressing the dynamic function key **F4** or clicking on the screen button D4 (Block Object Alarm), you block Alarm handling for the group member objects.
- By pressing the dynamic function key **F9** or clicking on the screen button D9 (Deblock Object Alarm), you deblock Alarm handling for the group member objects.
- By pressing the dynamic function key **F5** or clicking on the screen button D5 (Block Object Printout), you block alarm handling printouts for the group member objects.
- By pressing the dynamic function key **F10** or clicking on the screen button D10 (Deblock Object Printout), you deblock alarm handling printouts for the group member objects.

Group Alarm Presentation

For presentation of status on alarm groups, the following display elements are available:

- Process Display element
- Group display element
- Object closeup display element
- Object display element

The elements are briefly described below. For a detailed description of the Group Alarm display elements, please refer to the manual *AdvaCommand User Interface Reference Manual*.

Process Display Element

You can use the Group Alarm Process Display element (GAPD01), shown in the figure below, for status indication in Process Displays.

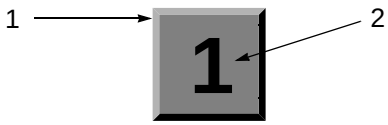


Figure 4-59. Display element GAPD01

- Green symbol indicates normal status.
- Red symbol indicates alarm status.
- Flashing red symbol indicates unacknowledged alarm status.
- A dotted yellow Frame (1) indicates that the object is blocked.
- The Indicator (2) shows number of alarms in the group.

Group Alarm Group Display Element

You can use the Group Alarm Group Display (GAGR01), as shown in the figure below, for status indication in group displays.

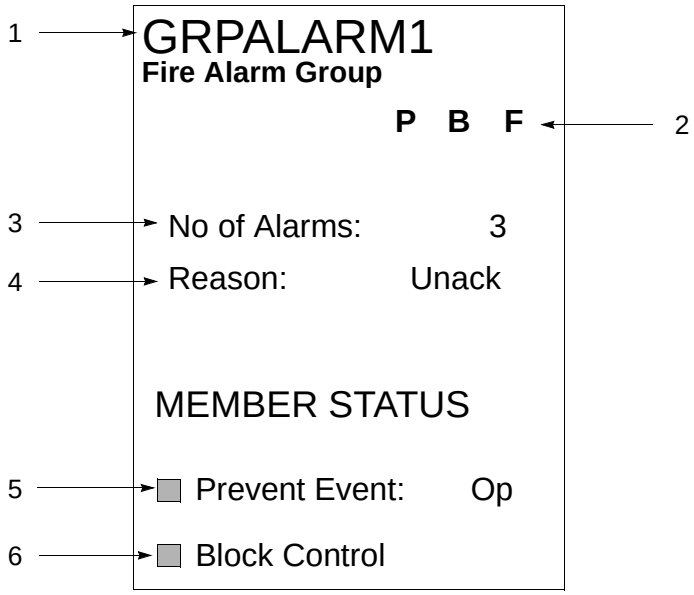


Figure 4-60. Display element GAGR01

1. The header shows Name and Description of the Group Alarm Object.
2. The Status Line shows status of the alarm group:
   - Yellow **B** indicates that the alarm handling is blocked.
   - Yellow **P** indicates that event printout is blocked.
   - Red **F** indicates alarm status.
   - Red flashing **F** indicates unacknowledged alarm status.
3. Number of members with alarm status.
4. Reason shows actual alarm group type:
   - **Alarm** indicates Alarm-triggered alarm group.
   - **Unack** indicates Unacknowledged Alarm-triggered alarm group.
5. Prevent Event indication.
   - **Pgm** indicates that Prevent Event is set by a PC program.
   - **Ext** indicates that Prevent Event is set by a Blocking Master, or due to First Up.
6. Block Control indication.

Object Closeup Display Element

The Group Alarm Closeup display (GAWI01) is shown in the figure below. This element is presented in the bottom right-hand corner of the screen when you select a Group Alarm Object.

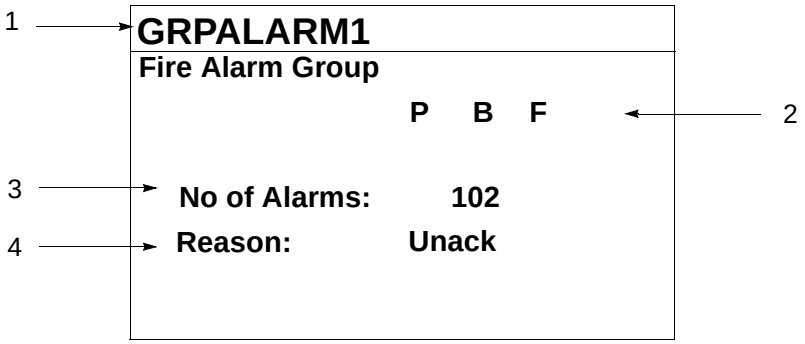


Figure 4-61. Object closeup display element GAWI01

1. The header shows Name and Description of the Group Alarm Object.
2. The Status Line shows status of the alarm group:
   - Yellow **B** indicates that the alarm handling is blocked.
   - Yellow **P** indicates that event printout is blocked.
   - Red **F** indicates alarm status.
   - Red flashing **F** indicates unacknowledged alarm status.
3. Number of members with alarm status.
4. Type of Alarm group:
   - **Alarm** means Alarm-triggered alarm group.
   - **Unack** means Unacknowledged Alarm-triggered alarm group.

Object Display Element

The Group Alarm Object display (GAOB01) consists of three pages:

- Page 1 shows alarm group status and member numbers 1-80.
- Page 2 shows alarm group status and member numbers 81-160.
- Page 3 shows alarm group status and member numbers 160-240.

The object display, Page 1, is shown below.

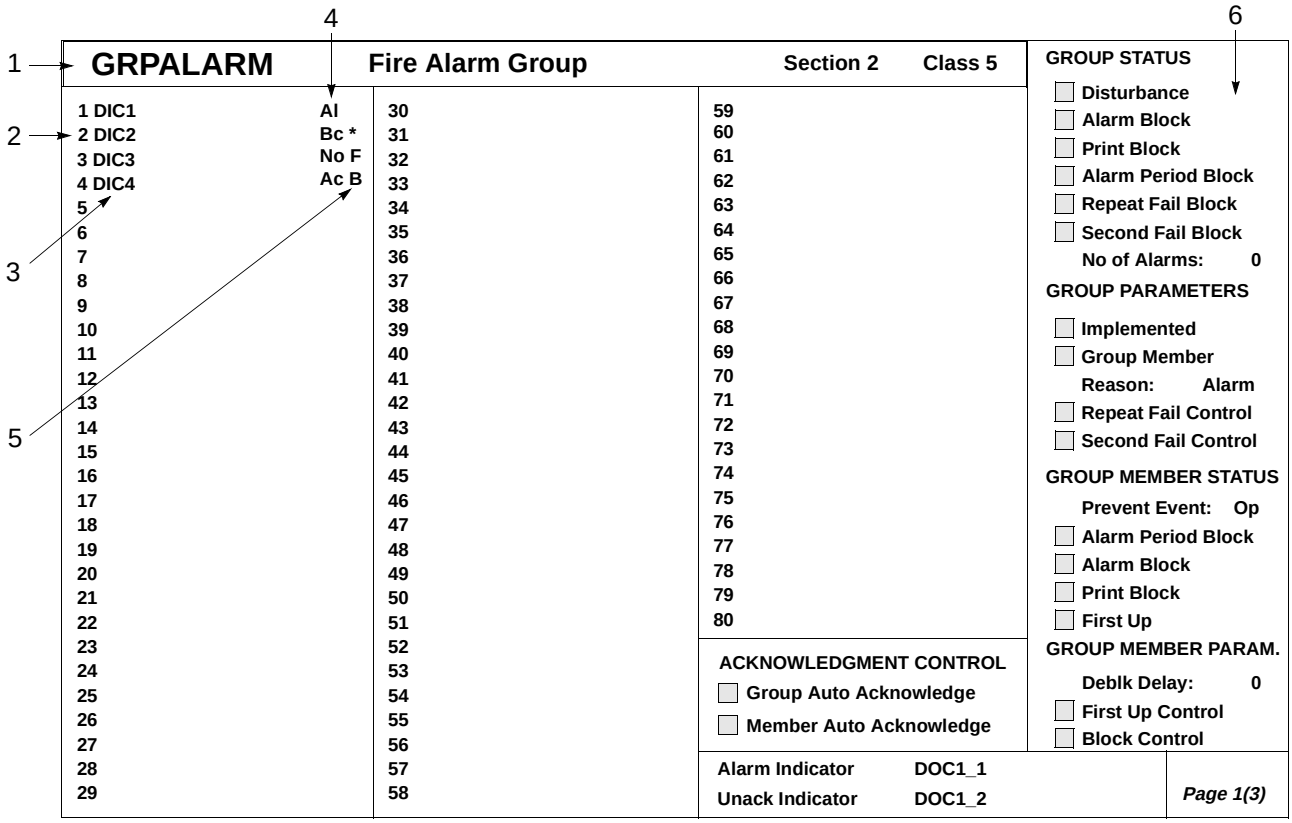


Figure 4-62. Group alarm object display GAOB01

1. Name and description of the Group Alarm Object.
2. Group Member index:
   - Page 1: members 1-80
   - Page 2: members 81-160
   - Page 3: members 161-240

3. The names of the member objects.
4. Indicates which effect the group member has on the group when an event occurs:
   - **Al**: The member affects the alarm status of the group.
   - **Ac**: The member is defined as an acknowledgement master in the group.
   - **Bc**: The member is defined as a blocking master in the group.
   - **No**: The member does not affect the group status
5. Member status:
   - ***** : Indicates First Up blocking.
   - **B**: Indicates that the member object is blocked.
   - **F**: Indicates that the member object is in alarm condition.
6. Group and member status indications.

4.2.3 AdvaCommand System Status

Manual supervision and fault tracing are obtained from different System Status displays. The information in the System Status displays is provided from the two product groups: Advant type nodes (OS, IMS, AC) and Master type nodes (MP, MV, MG).

4.2.3.1 System Overview Display

Select the subitem **System Status** from the item System Display Keys in the pop-up menu **Operation,** to present the **System Overview** display, which presents all nodes in the control network

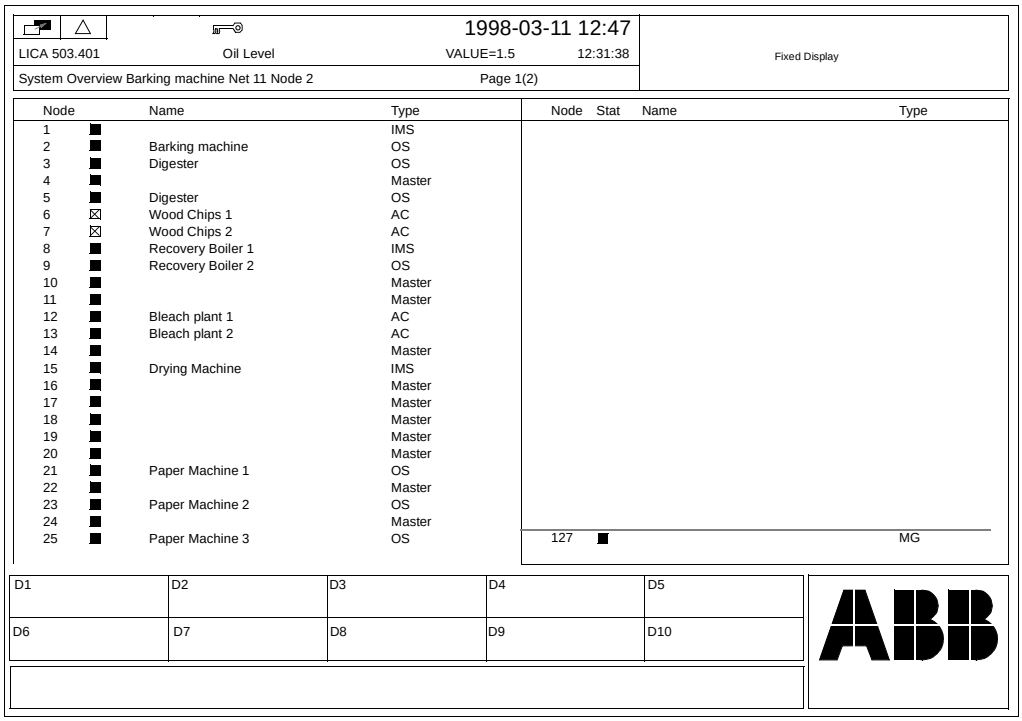


Figure 4-63. System Overview Display 1(2)

The display "**System Overview**" is divided into **two pages**. You can page through them using the paging keys.

Status for the whole node concerned is presented as follows:

- A **green filled square** if the node is correct.
- A **yellow cross** if the node has at least one erroneous:
  - Communication link connected
  - Hardware device (CPU, red. regulator, secondary memory, etc.)
  - Process I/O board

– Remote process I/O unit

– Miscellaneous board.

The description for the node is presented in the **Name** column. The description is **only** presented for **Advant type nodes**.

In the **Type** column, the node type is presented as follows:

- **OS** if the node is an Advant operator station
- **IMS** if the node is an Advant Information Management Station
- **AC** if the node is an Advant Controller
- **MG** if the node is a Master Gateway between control networks
- **Master** if the node is an operator station of MasterView 800/1 type or a Process Station of MasterPiece 200/1 type. An ES is also presented as a Master node.

To get information from a single node, place the **cursor** on the **desired node** and click with the **select mouse button**.

Use the dynamic functions keys to select the desired system status display for the node.

D1	D2 Node	D3 Net	D4	D5
D6	D7	D8	D9	D10

Figure 4-64. Dynamic Function Keys for System Overview when Selected Node is OS, IMS or MG in a Control Network

D1	D2 Advant Controller 400	D3 Net	D4 Fieldbuses	D5 Master Fieldbus
D6 S100 I/O 1	D7 S100 I/O 2	D8 S100 I/O Redundant	D9	D10 S100 I/O Bus Extender

Figure 4-65. Dynamic Function Keys for System Overview when Selected Node is AC

D1	D2 Node	D3 Net	D4	D5
D6 Local I/O Boards	D7 Local Redundant I/O Boards	D8 Remote I/O & Misc	D9	D10

Figure 4-66. Dynamic Function Keys for System Overview when Selected Node is Master

The dynamic function keys **D6**, **D7** or **D8** are only valid if the selected node is a MasterPiece 200/1.

4.2.3.2 Node Status Display

Press **F2** or click on the screen button D2 (Node) for the status of the peripheral equipment for the selected node. The appearance of the node status display depends on the type of node selected.

OS Node (Node Status Display for an ACfWNT)

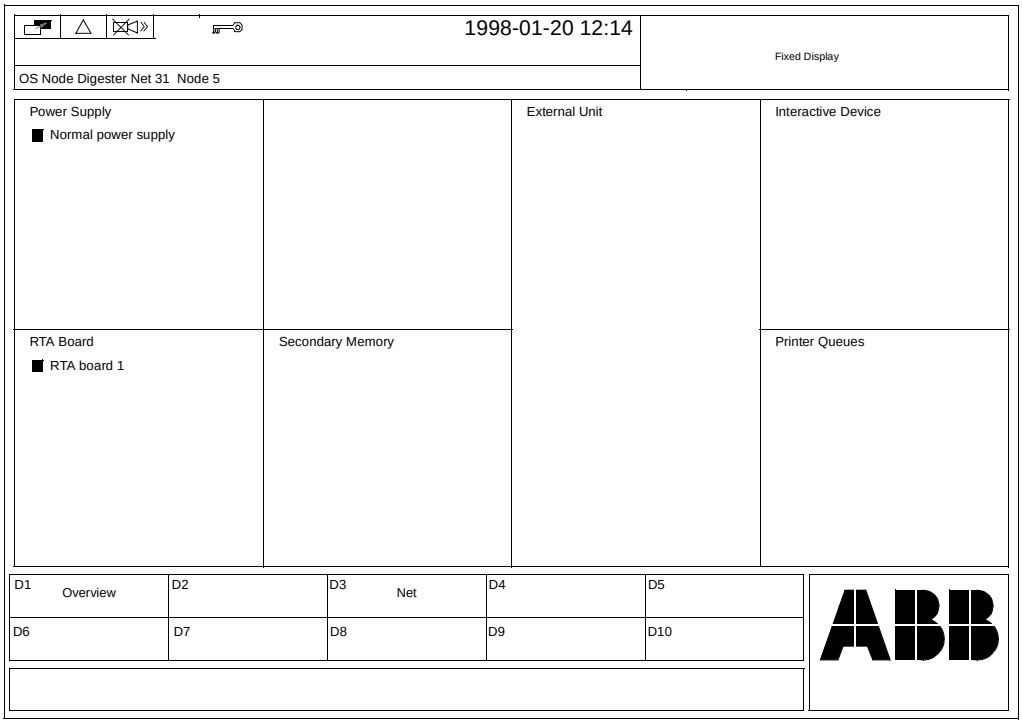


Figure 4-67. Node Status Display for an ACfWNT

The **Node status display** ("OS Node") for an ACfWNT, illustrated above, presents the status of Power Supply and RTA Board.

The symbols have the following meaning:

- A **green filled square** means the device is correct.
- A **red cross** means the device is erroneous.

IMS Node (Node Status Display for an IMS)

The **Node status display** ("IMS Node") for an **IMS** (Information Management Station) is similar in appearance to the OS node status display. It presents the status of Power Supply, RTA Board, Secondary Memory, Software, External unit, Interactive Device and Printers. The symbols have the same meaning as they do in the OS node display.

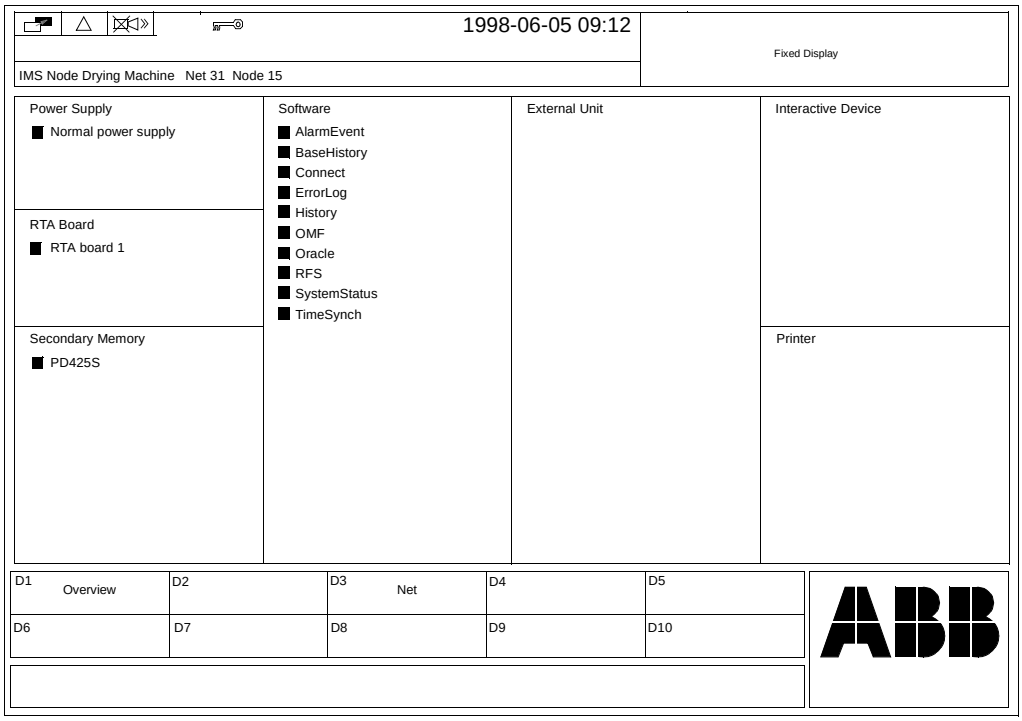


Figure 4-68. Node Status Display for IMS

Advant Controller 400 (Node Status Display for an Advant Controller 400 Series)

The **Node status display** ("Advant Controller 400") for an **Advant Controller 400 Series** is illustrated below:

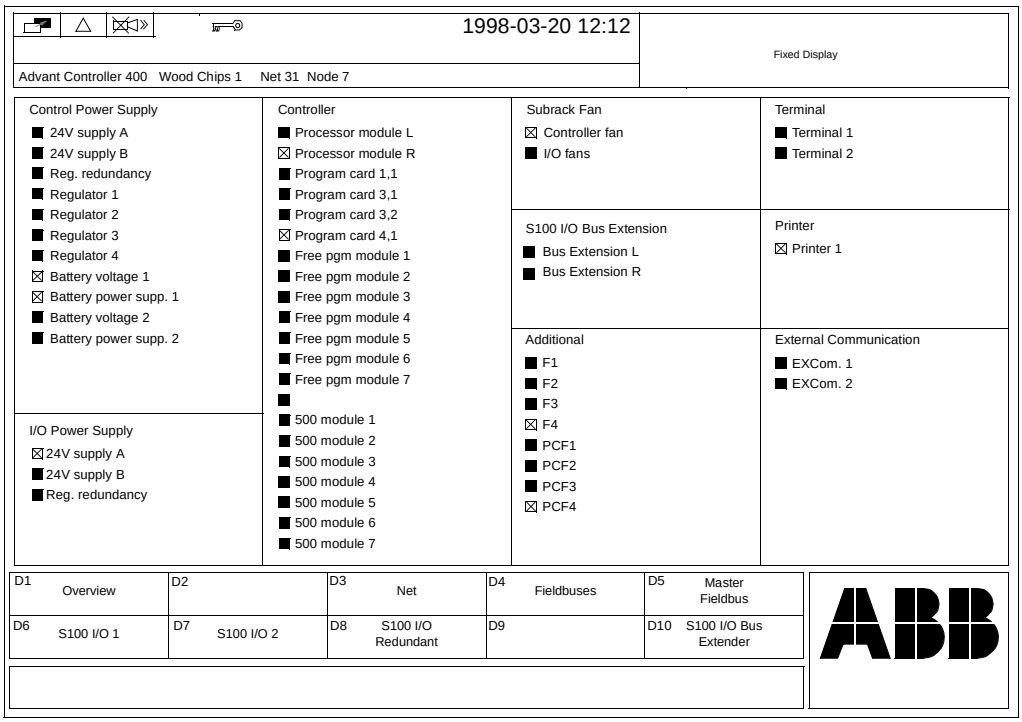


Figure 4-69. Node Status Display for an Advant Controller 400 Series

The Node status display presents status for Power Supply, Processors, Program Cards, Free Programmable Modules, 500 Modules, Fan, S100 I/O Bus Extender, Additional (user defined - & PC triggered supervision) Devices, Terminals, Printers and External Communication.

The symbols for the Processors, have the following meaning:

- A **green filled square** means the processor is active.
- A **green empty square** means the processor is activated but stand by.
- A **yellow cross** means the processor is in warning status
- A **red cross** means the processor is erroneous.

The symbols for the Program Cards, Free Programmable Modules and 500 Modules have the following meaning:

- A **green filled square** means the device is correct.
- A **yellow cross** means the device is in warning status
- A **red cross** means the device is erroneous.

The symbols for the Power Supply, Fan, S100 I/O Bus Extenders, Additional Devices, Terminals, Printers and External Communication have the following meaning:

- A **green filled square** means the device is correct.
- A **red cross** means the device is erroneous.

Master Node (Node Status Display for a Master Station)

The **Node status display** ("Master Node") for a **Master** station is illustrated below:

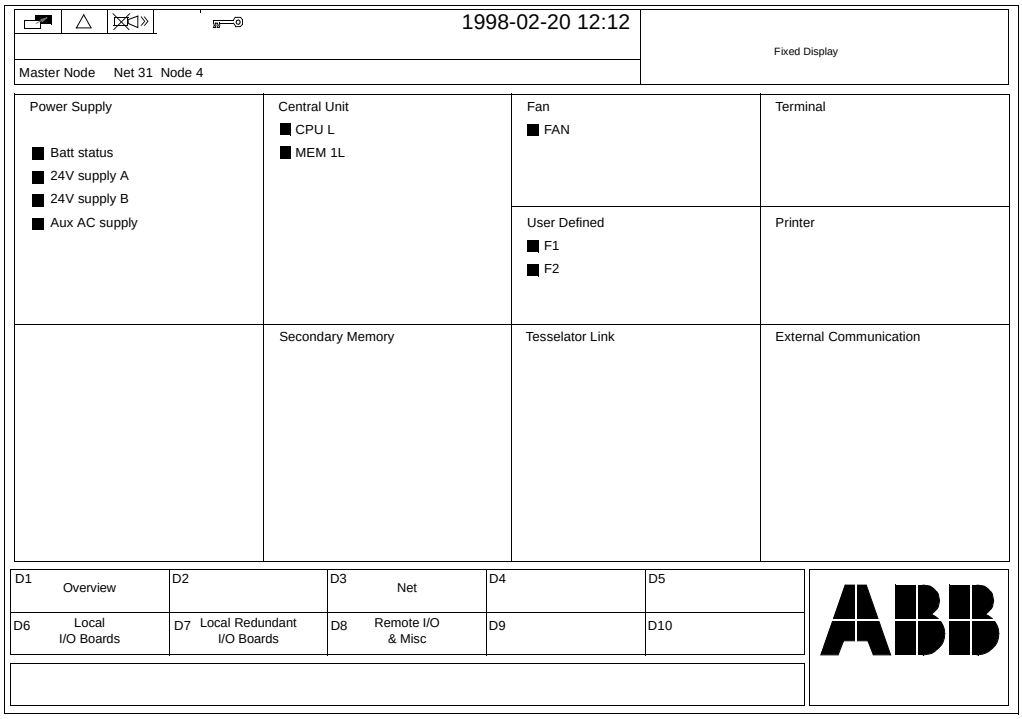


Figure 4-70. Node Status Display for a Master Station

The symbols for the processors, **CPU L** (L=Left) and **CPU R** (R=Right), have the following meaning:

- A **green filled square** means the processor is active.
- A **green empty square** means the processor is activated but stand by.
- A **yellow empty square** means the processor is stopped.
- A **red cross** means the processor is erroneous.

NOTE

The CPU R exists only when a MasterPiece 200/1 has a redundant processor.

The redundant control unit **RCU** exists only when a MasterPiece 200/1 has a redundant processor.

Symbols for the **RCU** have the following meaning:

- A **green filled square** means the redundant control unit is correct.
- A **red cross** means the redundant control unit is erroneous.

The memory boards **MEM 1L**, **MEM 2L**, **MEM 1R** and **MEM 2R** are supervised continuously.

Symbols for each memory board have the following meaning:

- A **green filled square** means correction is active, but no correction has been made.
- A **red cross** means a memory board correction has been made.

The MEM 1R and MEM 2R only exist when a MasterPiece 200/1 has a redundant processor.

The status of Power Supply, Terminals, Printers, External Communication, Secondary Memory, Fan, User Defined devices and Tesselator Lnk are also presented.

Symbols for these devices have the following meaning:

- A **green filled square** means the device is correct.
- A **red cross** means the device is erroneous.

4.2.3.3 Net Status Display

Press **F3** or click on the screen button D3 (Net) in the overview display for the status of MasterNet connected to the selected node. The appearance of the **Net status display** ("Network") depends on the type of selected node. The displays are divided into several pages. You can page through them either by clicking on the **Left Display** or **Right Display** button in the **Operation Keys box** or directly selecting the item Left Display or Right Display in the **pop-up menu Operation**.

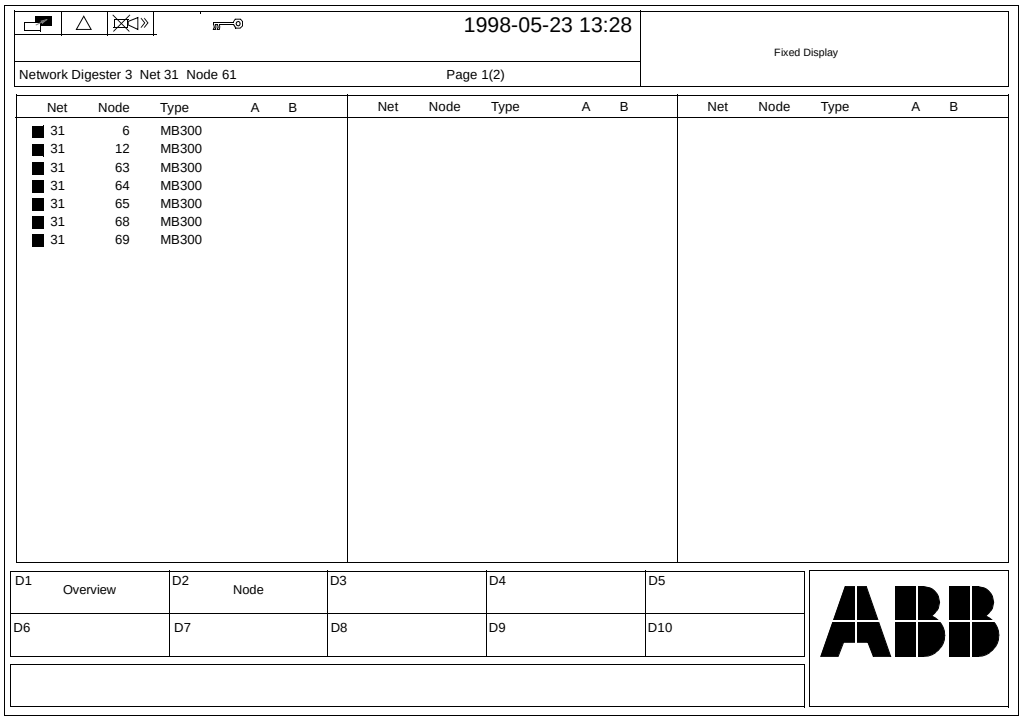


Figure 4-71. Net Display 1(2) for an ACfWNT

Status of the net is presented as follows:

- A **green filled square** means the link is correct.
- A **red cross** means the link is erroneous.

In the **Type** column, the link type is presented, for example MB300.

If the link is a **MasterBus 200**, the **A** and **B** columns show which of the redundant buses are used and their status:

- A **green filled square** means the link is correct.
- A **red cross** means the link is erroneous.

4.2.3.4 I/O Status Displays

Available I/O status displays for an **Advant Controller 400 Series**:

- Fieldbus display showing the status of Advant Fieldbus 100 devices (Advant Controller 110, S800 I/O Stations, Drives System etc.) and Profibus DP devices.
- Advant Fieldbus 100 Bus Unit display showing the status of Advant Fieldbus 100 communication interface (The display is selected from the Fieldbus display)
- S800 I/O Station display showing the status of a S800 I/O station and its I/O modules (The display is selected from Fieldbus display)
- Master Fieldbus display showing the status of S400 remote I/O boards
- S100 I/O 1 display showing the status of local single S100 I/O boards
- S100 I/O 2 display showing the status of miscellaneous S100 boards
- S100 I/O Redundant display showing the status of redundant S100 I/O boards.
- S100 I/O Bus Extender display showing the status of S100 I/O Bus Extenders.

By using the dynamic keys in the overview display, you present the display.

4.2.3.5 Fieldbus Displays

Press **F4** or click on the screen button D4 (Fieldbuses) in the overview display for the status of Advant Fieldbus 100 devices and Profibus DP devices. The display is divided into seven pages. You can page through them using the paging keys. The **Fieldbus display** of an **Advant Controller 400 Series** is illustrated below (In this example AF100IOS_2 is marked selectable):

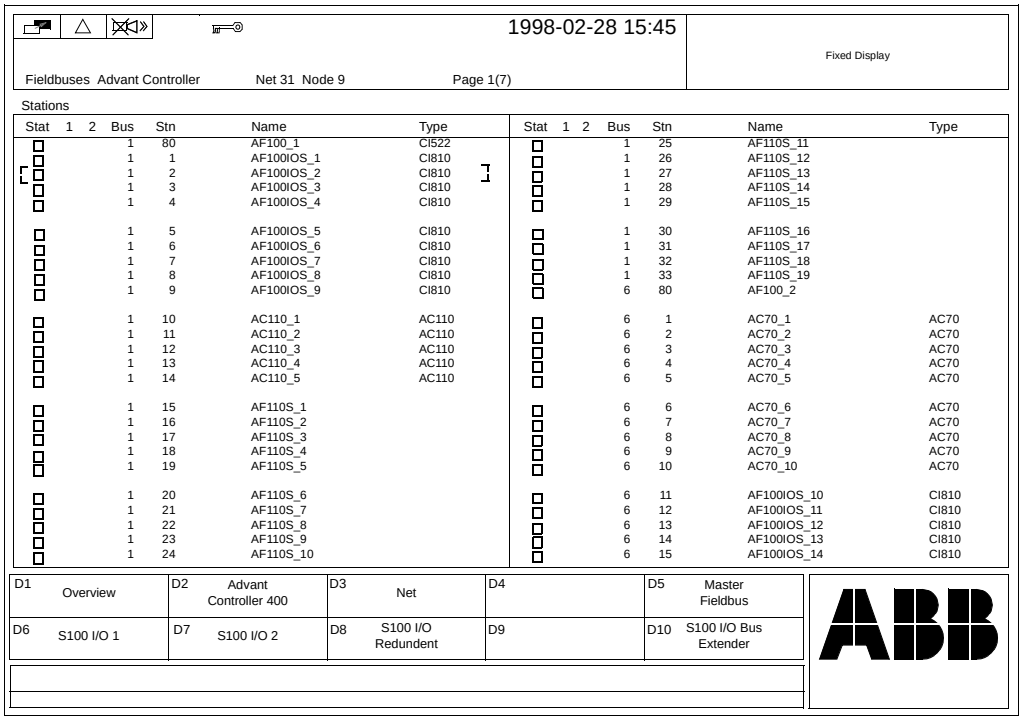


Figure 4-72. Fieldbus system status display page 1(7)

Advant Fieldbus 100

The status (**Stat**) of the Advant Fieldbus 100 units are presented as follows:

- A **green filled square** means the unit is correct.
- A **yellow cross and square** means the unit is in warning status.
- A **red cross and square** means the unit is erroneous.

In the **1** and **2** column, status of the two redundant media connecting the remote I/O units is presented as follows:

- A **green filled square** means the bus is correct.
- A **red cross and square** means the bus is erroneous.
- **No indication** means there is no supervision of AF100 configurated.

If supervision of media redundancy and bus cable redundancy are configurated, the columns labeled 1 and 2 can also show status as follows:

- A **yellow cross and square** means either bus has erroneous media redundancy. More information can be obtained from AF100 bus unit display and S800 I/O station display.

Bus and station number for remote I/O units are presented in the **Bus** and **Stn** columns.

A name of remote I/O units are presented in the **Name** column. The name is obtained from the data base element belonging to remote I/O unit (AF100/AF100IOS/AF100S/AC110/AC70 data base elements.)

The **Type** column shows type designation of the board type. Type is only shown if Advant Controller 400 has version 1.3 or later.

When the cursor points at a S800 I/O station or AF100 Bus Unit the text is marked selectable.

To get more information about a certain S800 I/O station or AF100 Bus unit, place the **cursor** on the desired S800 I/O station or AF100 Bus unit and click with the **select mouse button**.

An **S800 I/O Station display** or AF100 Bus unit appears.

Profibus DP

The status of the Profibus DP units is presented as follows:

- A **green filled square** means the unit is correct.
- A **yellow cross and square** means the unit is in warning status.
- A **red cross and square** means the unit is erroneous.

The columns labeled **1** and **2** are not used for Profibus DP.

A name of Profibus DP fieldbus and devices are presented in the **Name** column. The name is obtained from the database element belonging to Profibus DP (PB/PBS database elements.)

Board type of Profibus DP is presented in the **Type** column. The board type is obtained from the database element belonging to Profibus DP (PB/PBS database elements.)

4.2.3.6 Advant Fieldbus 100 Bus Unit Display

The **Advant Fieldbus 100 bus units** (CI522) **display** is illustrated below:

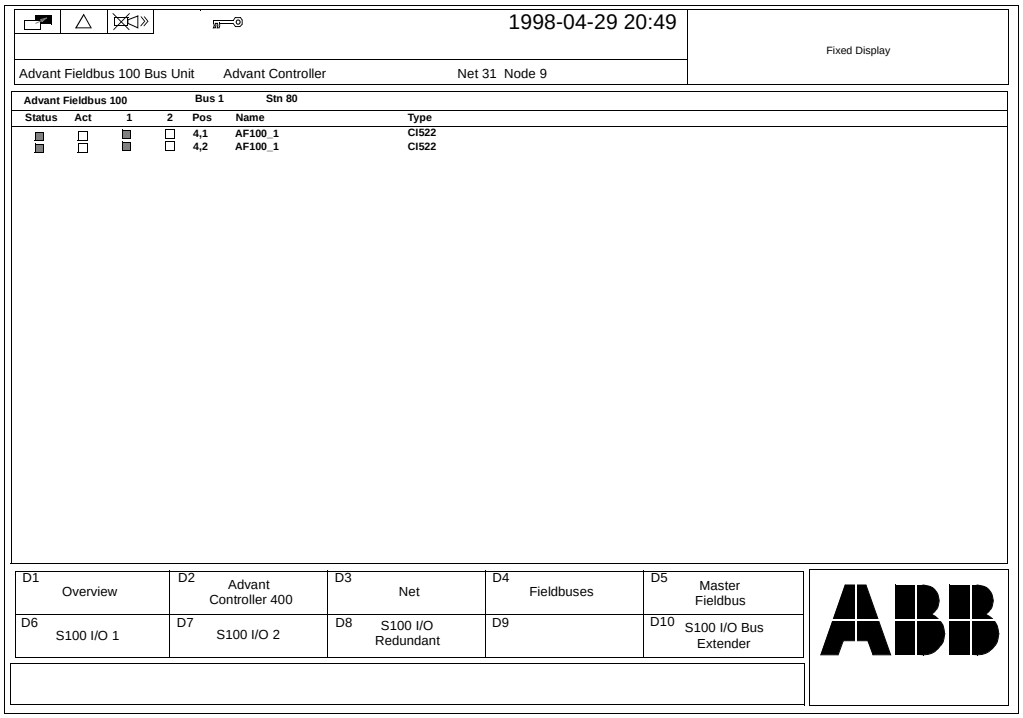


Figure 4-73. Advant Fieldbus 100 bus unit display

The first line of the main display shows status, name and type of AF100 Bus Unit device. The second line shows status of redundant AF100 Bus Unit. If there is no redundant AF100 Bus Unit the second line is empty.

The **Status** column indicates the status of the AF100 Bus Unit:

- A **green filled square** means AF100 Bus Unit is ok.
- A **yellow cross and square** means AF100 Bus Unit is in warning status.
- A **red cross and square** means AF100 Bus Unit is erroneous.

The **Act** column indicates if the AF100 Bus Unit is activated:

- A **green filled square** means the AF100 Bus Unit is activated.
- A **green empty square** means the AF100 Bus Unit module is standby.

In the columns labeled **1** and **2**, status of the two redundant media connecting the AF100 Bus Units are presented as follows:

- A **green filled square** means the bus is correct.
- A **red cross and square** means the bus is erroneous.
- **No indication** means there is no bus supervision configurated.

In the **Name** column, a name of the AF100 Bus Unit is presented. The text color is:

- **Grey** is default.
- **Yellow** if AF100 Bus Unit is in warning status.
- **Red** if AF100 Bus Unit is erroneous.

The **Type** column shows type designation of the AF100 Bus Units.

If an AF100 bus unit is redundant and the cursor points at either AF 100 bus units the indications and texts is marked selectable.

If you click with the **select mouse button** a select frame is presented around the selected AF100 bus unit and a new set of dynamic keys is displayed:

D1	D2 Change Over	D3	D4	D5
D6	D7	D8	D9	D10

Figure 4-74. Change Over dialog

If no authority is set the dynamic key for Change Over is dimmed and no change over between redundant AF100 bus units can be performed.

4.2.3.7 S800 I/O Station Display

The **S800 I/O Station** status **display** is illustrated below

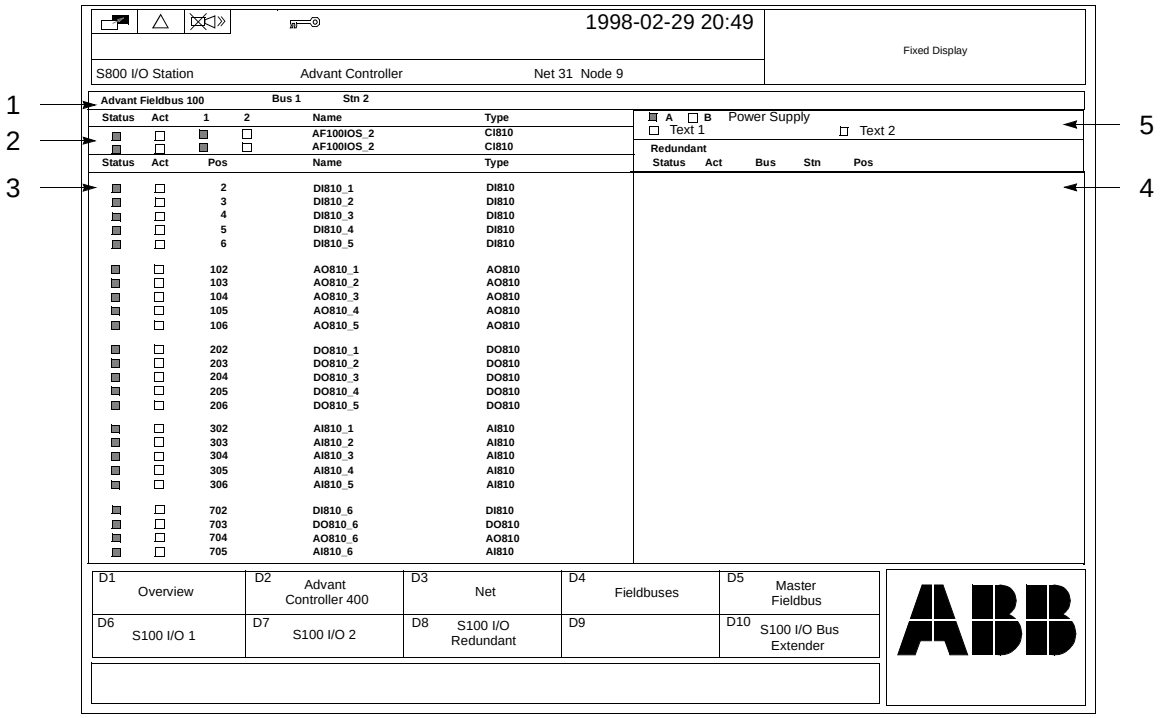


Figure 4-75. S800 I/O Station system status display

The S800 I/O Station display is divided into five parts:

1. Advant Fieldbus 100 bus and station number
2. FCI (Field Communication interface)
3. S800 I/O modules
4. Redundant S800 I/O modules (For future use)
5. Supervision of power supply.

1. Advant Fieldbus 100 bus and station number

The text **Advant Fieldbus 100** is followed by a bus number and a station number. **Bus** shows Advant Fieldbus 100 bus number and **Stn** shows Advant Fieldbus 100 station number.

2. FCI (Field Communication interface)

The first line of the main display shows status, name and type of FCI (Field Communication Interface) device.

The **Status** column indicates the status of the FCI:

- A **green filled square** means FCI is ok.
- A **yellow cross and square** means FCI is in warning status. Any S800 I/O module may be erroneous
- A **red cross and square** means FCI is erroneous.

The **Act** column indicates if the FCI is activated:

- A **green filled square** means the FCI is activated.
- A **yellow empty square** means the FCI is deactivated.
- A **green empty square** means the FCI module is standby.

In the **1** and **2** column, status of the two redundant media connecting the FCI units is presented as follows:

- A **green filled square** means the bus is correct.
- A **red cross and square** means the bus is erroneous.
- **No indication** means there is no bus supervision configurated.

In the **Name** column, a name of the FCI is presented. The text color is:

- **Grey** is default (FCI is activated).
- **Yellow** if FCI is inactivated or in warning status.
- **Red** if FCI is erroneous.

The **Type** column shows type designation of the FCIs.

To select the FCI, place the **cursor** on the **FCI** and click with the **select mouse button**.

A select frame is presented around the FCI and a new set of dynamic keys is displayed:

D1 Activate	D2 Change Over	D3	D4	D5
D6 Deactivate	D7	D8	D9	D10

Figure 4-76. Activate, Deactivate and Change Over dialog

The Change Over key appears only when redundant FCI exist.

3. S800 I/O Modules

The **Status** column indicates the status and I/O modules:

- A **green filled square** means the I/O module is ok.
- A **yellow cross and square** means the I/O module is in warning status.
- A **red cross and square** means the I/O module is erroneous.

The **Act** column indicates if an I/O module is activated:

- A **green filled square** means the I/O module is activated.
- A **yellow empty square** means the I/O module is deactivated.
- A **green empty square** means the I/O module is standby.
- A **green partly filled square** means the output module is set to a predetermined (OSP) value.

The **Pos** column shows the positions of the I/O modules.

In the **Name** column, a names of the I/O modules are presented. The text color is:

- **Grey** is default (the I/O module is activated).
- **Yellow** if the I/O module is inactivated or in warning status.
- **Red** if the I/O module is erroneous.

The **Type** column shows type designation of the I/O modules. The color is the same as Name.

4. Redundant S800 I/O modules

For future use.

5. Supervision of power supply

The **Power Supply A** and **B** indicate the status of power supply for the S800 I/O Station. Power supervision of redundant S800 I/O Station is not shown here.

- A **green filled square** means power supply is ok.
- A **red cross and square** means power supply is out of order.
- The **whole display is empty** of information. Both power supply A and B are out of order. In the Advant Fieldbus 100 display the S800 I/O station is marked erroneous with a **red cross and square**.
- **Neither the text nor indications** are visible, supervision of power supply A and B is not enabled.

Indication and Text 1 and **Indication and Text 2** are both user configurable. The texts are intended for type designation of external power supply A and B. The indications and the texts can be configurated to be shown or not.

- A **green filled square** means external power supply is ok.
- A **red cross and square** means external power supply is erroneous.

Using the dynamic key **F1** or the screen button D1 (Overview display), you reach the overview display.

Using the dynamic key **F4** or the screen button D4 (Fieldbuses) you reach the Advant Fieldbus 100 again and other S800 I/O system status displays can be presented.

S800 I/O Module dialog

To select an I/O module, place the **cursor** on the **desired I/O module** and click with the **select mouse button**.

A select frame is presented around the selected I/O module and a new set of dynamic keys is displayed:

D1 Activate	D2	D3	D4	D5
D6 Deactivate	D7	D8	D9	D10

Figure 4-77. Activate and Deactivate dialog

If no authority is set the dynamic keys are dimmed and no activation, deactivation or change over between I/O modules can be performed.

You activate or deactivate the selected I/O module by pressing one of the dynamic function keys, **F1** or click on the screen button D1 (Activate) or **F6** or click on the screen button D6 (Deactivate).

4.2.3.8 Master Fieldbus Display

Press **F5** or click on the screen button D5 (Master Fieldbus) in the overview display for the status of Master remote I/O. The display is divided into several pages. You can page through them using the paging keys. The **Master Fieldbus display** for an **Advant Controller 400 Series** is illustrated below:

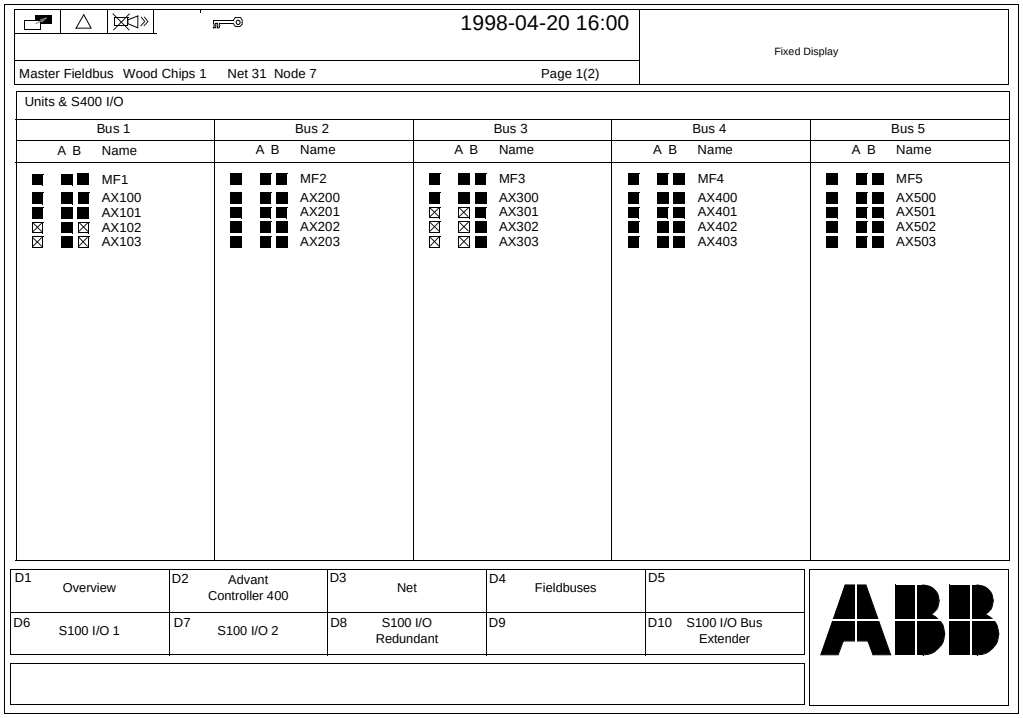


Figure 4-78. Master Fieldbus Display 1(2) for an Advant Controller 400 Series

The status for the remote I/O unit (for Master) is presented as follows:

- A **green filled square** means the unit is correct.
- A **red cross** means the unit is erroneous.

In the **A** and **B** columns, status of the **two redundant buses** connecting the remote I/O units is presented as follows:

- A **green filled square** means the bus is correct.
- A **red cross** means the bus is erroneous.

A name for the remote I/O unit is presented in the **Name** column. The name is obtained from the data base element belonging to the remote I/O unit (AX/DX/PX, etc.) or other boards.

4.2.3.9 S100 I/O 1 Display

Press **F6** or click on the screen button D6 (S100 I/O 1) in the overview display for the status of local I/O (not redundant). The **S100 I/O 1 display** for an **Advant Controller 400 Series** is illustrated below:

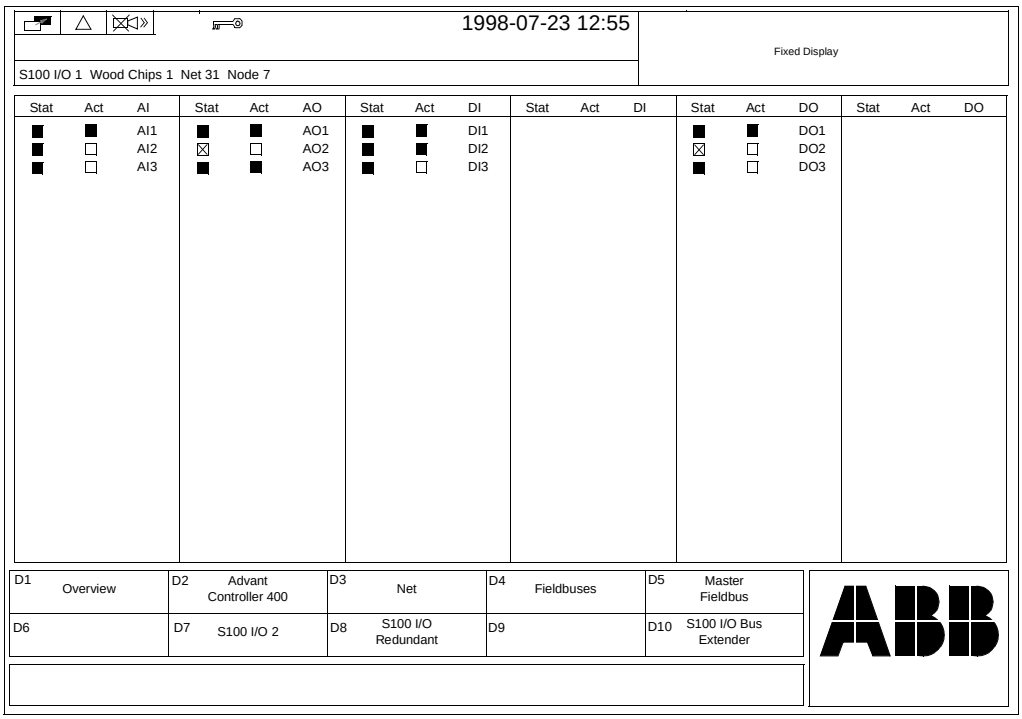


Figure 4-79. S100 I/O 1 Display for an Advant Controller 400 Series

The status for the local I/O board is presented as follows:

- A **green filled square** means the board is correct.
- A **red cross** means the board is erroneous.

The **Act** column indicates if the local I/O board is activated:

- A **green filled square** means the board is activated.
- A **yellow empty square** means the board is deactivated.

In the **Name** column, a generic name for the local I/O board is presented. The text is:

- **Yellow** if the board is deactivated.
- **Red** if the board is erroneous.
- **Grey** is the default (the board is activated).

Using the dynamic function key **F1** or the screen button D1, you reach the overview display.

To activate or deactivate an I/O board, do as follows:

1. Place the **cursor** on the **desired board** and click with the **select mouse button**.

   A new set of dynamic function keys is displayed.

2. Press the **activate** or **deactivate** key/screen button.

4.2.3.10 S100 I/O 2 Display

Press **F7** or click on the screen button D7 (S100 I/O 2) in the overview display for the status of miscellaneous boards. The **S100 I/O 2 display** for an **Advant Controller 400 Series** is illustrated below:

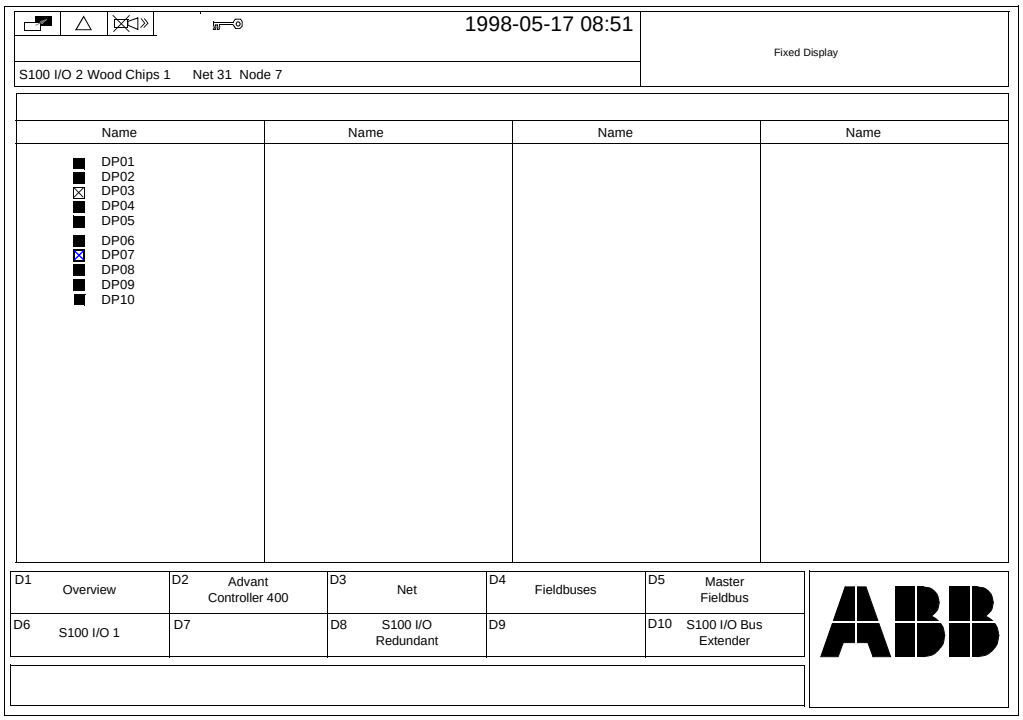


Figure 4-80. S100 I/O 2 Display for an Advant Controller 400 Series

The status of miscellaneous boards is presented as follows:

- A **green filled square** means the board is correct.
- A **yellow cross** means the board is in warning status.
- A **red cross** means the board is erroneous.

4.2.3.11 S100 I/O Redundant Display

Press **F8** or click on the screen button D8 (S100 I/O Redundant) in the overview display for the status of redundant I/O. The **S100 I/O Redundant display** for an **Advant Controller 400 Series** is illustrated below:

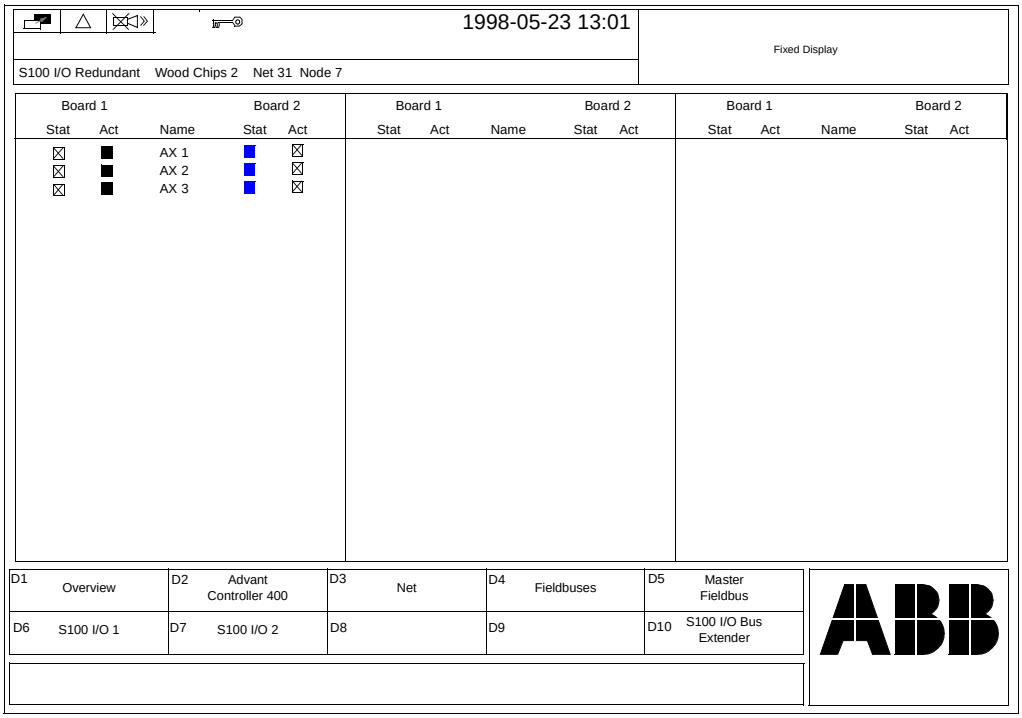


Figure 4-81. S100 I/O Redundant Display for an Advant Controller 400 Series

The status for the local I/O board is presented as follows:

- A **green filled square** means the redundant board is correct.
- A **yellow cross** means the redundant board is in warning status.
- A **red cross** means the redundant board is erroneous.

The **Act** column indicates if the local I/O board is activated:

- A **green filled square** means the redundant board is active.
- A **green empty square** means the redundant board is activated but stand by.
- A **yellow empty square** means the redundant board is deactivated.

In the **Name** column, a generic name for the I/O board (for the process) is presented. The text is:

- **Yellow** if the board is out of service.
- **Red** if the board is erroneous.
- **Yellow** if the board is in warning status.
- **Grey** is the default (the board is activated).

If the board is run without redundancy, the indications are only given in the columns to the left.

Using the dynamic function key **F1** or the screen button D1, you reach the overview display.

To select an I/O board, place the **cursor** on the **desired board** and click with the **select mouse button**.

A new set of dynamic function keys is displayed.

You activate or deactivate the selected board by pressing one of the dynamic function keys, **F1** or the screen button D1 (Activate) or **F6** or the screen button D6 (Deactivate). For redundant boards, the whole device is activated or deactivated.

You change the mode of the selected board by pressing the dynamic function key **F2** or the screen button D2 (Change Over). The redundant board that was standby enters master mode and vice versa. A redundant board in master mode is the board that is currently connected to the process, and the corresponding standby redundant board is ready to take over when necessary.

Available I/O status displays for a **Master:**

- Local I/O Boards showing the status for local I/O (not redundant).
- Local Redundant I/O Boards showing the status for local redundant I/O.
- Remote I/O & Misc showing the status for remote I/O and miscellaneous boards.

The **Local I/O Boards display** and **Local Redundant I/O Boards display** for a **Master** has the same appearance and functionality as the corresponding **S100 I/O 1 display** and **S100 I/O Redundant display** for an **Advant Controller 400 Series**.

The remote I/O units and miscellaneous boards in the **Remote I/O & Misc display** for a **Master** are presented with the same functionality as in the **Master Fieldbus display/S100 I/O 2 display** for an **Advant Controller 400 Series.**

By using the dynamic keys in the overview displays, you present the displays.

Click on **D6** (Local I/O Boards) in the overview display for the status of local I/O boards.

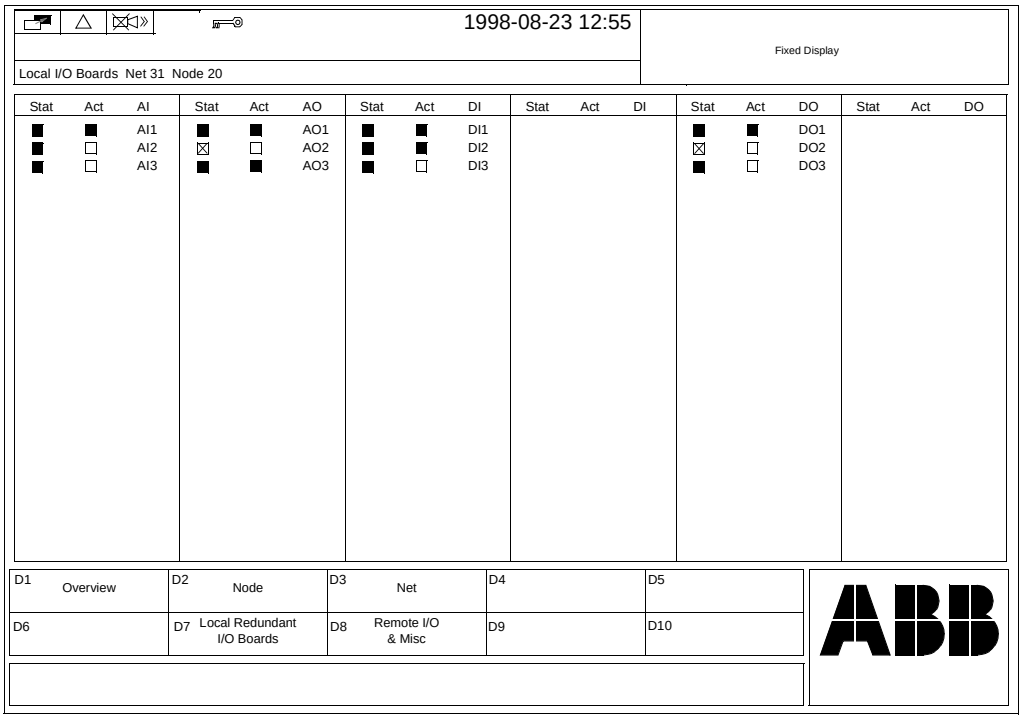


Figure 4-82. Local I/O Boards display for a Master

Click on **D7** (Local Redundant I/O Boards) for the status of local redundant I/O boards.

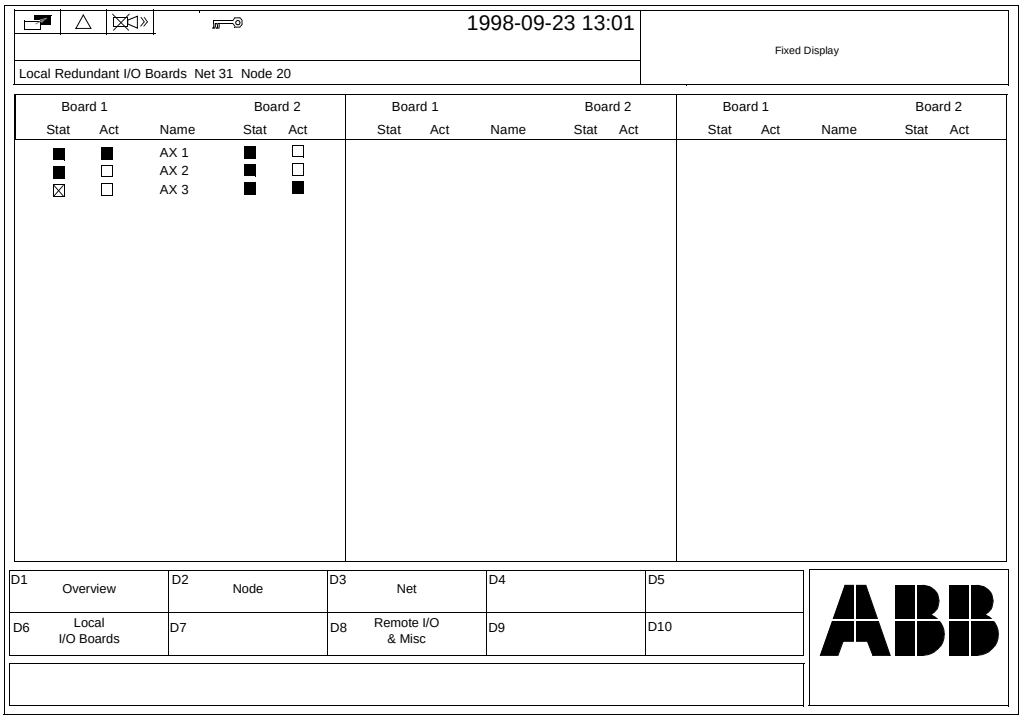


Figure 4-83. Local Redundant I/O Boards display for a Master

Click on **D8** (Remote I/O & Misc) for the status of remote I/O and miscellaneous boards.

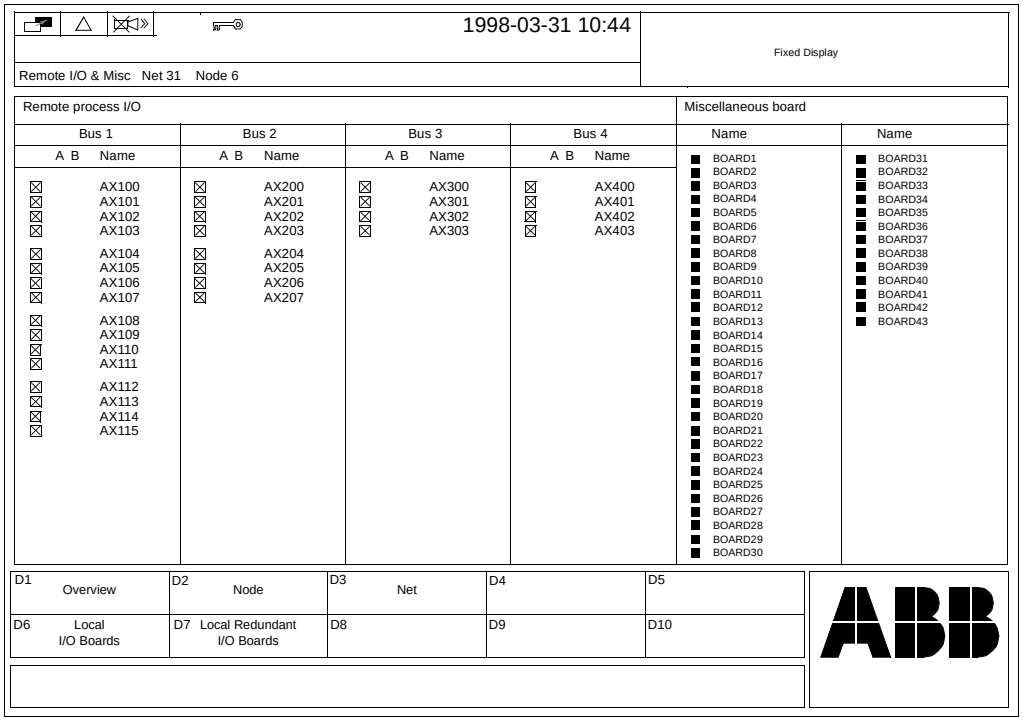

1998-03-31 10:44
Fixed Display
Remote I/O & Misc Net 31 Node 6
Remote process I/O
Miscellaneous board
Bus 1
Bus 2
Bus 3
Bus 4
A B Name
AX100 AX101 AX102 AX103 AX104 AX105 AX106 AX107 AX108 AX109 AX110 AX111 AX112 AX113 AX114 AX115
AX200 AX201 AX202 AX203 AX204 AX205 AX206 AX207
AX300 AX301 AX302 AX303
AX400 AX401 AX402 AX403
Name
BOARD1 BOARD2 BOARD3 BOARD4 BOARD5 BOARD6 BOARD7 BOARD8 BOARD9 BOARD10 BOARD11 BOARD12 BOARD13 BOARD14 BOARD15 BOARD16 BOARD17 BOARD18 BOARD19 BOARD20 BOARD21 BOARD22 BOARD23 BOARD24 BOARD25 BOARD26 BOARD27 BOARD28 BOARD29 BOARD30
Name
BOARD31 BOARD32 BOARD33 BOARD34 BOARD35 BOARD36 BOARD37 BOARD38 BOARD39 BOARD40 BOARD41 BOARD42 BOARD43
D1 Overview
D2 Node
D3 Net
D4
D5
D6 Local I/O Boards
D7 Local Redundant I/O Boards
D8
D9
D10

Figure 4-84. Remote I/O & Misc Display for a Master

4.2.3.12 S100 I/O Bus Extender Display

The figure below shows the **S100 I/O Bus Extender display** for an Advant Controller 450.

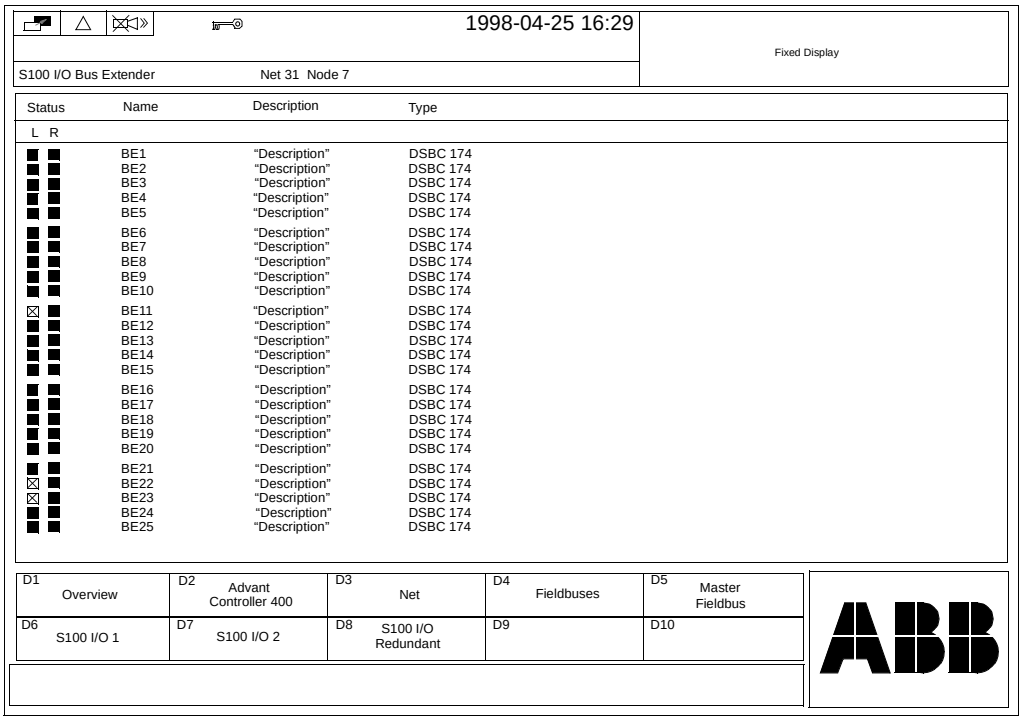


Figure 4-85. S100 I/O Bus Extender display for an Advant Controller 400 Series

The status left and right symbols for the Bus Extenders, have the following meaning:

- A **green filled square** means the S100 I/O bus extender is primary.
- A **green empty square** means the S100 I/O bus extender is backup.
- A **yellow cross** means the S100 I/O bus extender is in warning state.
- A **red cross** means the S100 I/O bus extender is erroneous.

In the **Name** column, the names of all S100 I/O bus extenders are presented. The text is:

- **Grey** is default (S100 I/O Bus Extender is activated).
- **Red** if the S100 I/O Bus Extender is erroneous.

The **Description** column shows descriptions of S100 I/O bus extender. The color is the same as Name.

The **Type** column shows type designation of S100 I/O bus extender. The color is the same as Name.

4.2.4 Pop-up Menus

All functions can be handled from a pop-up menu. You can reach this menu via the mouse.

When you press the right mouse button, one of the two types of pop-up menus, **Operation** and **Object Handling**, appears.

Which menu appears on the screen depends on the cursor's position on the screen.

If the cursor is placed on an object, the Object Handling menu appears. Otherwise, the Operation menu appears.

To select one of the items use drag and drop.

There are three different kind of events behind the items when selected.

One with:

- **Event** sent as an output direct
- **Submenu** with subitems (indicated with an arrow)
- **Dialog box**

  There are three different types of dialog boxes for system control in the form of buttons arranged as:

  – Box

  – Row

  – Column

  These boxes contains some items and subitems from the Operation menu and Object Handling menu.

  The difference between the pop-up menus and the dialog boxes is that the dialog boxes do not disappear when a button is pressed or a display change occurs.

4.2.4.1 Operation menu

This menu takes care of all functionality concerning display change.

If the cursor is placed outside a display element of an object, then the pop-up menu concerning display change occurs when you press the right mouse button.

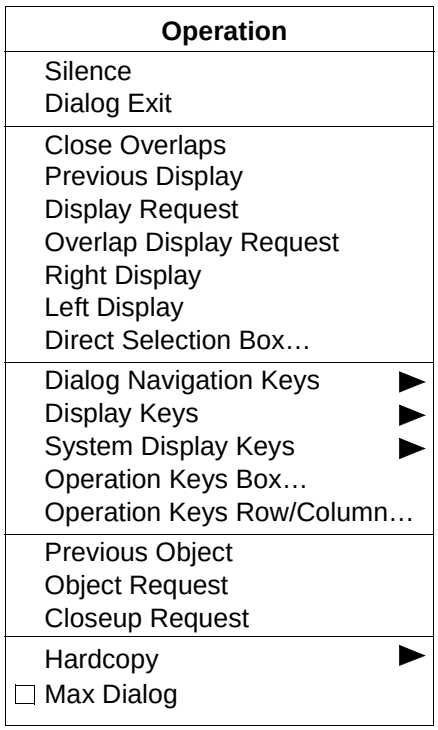


Figure 4-86. Pop-up menu Operation for Display Change

Silence — Silence an audible alarm or an external audible alarm.

Dialog Exit — Exit from the selected dialog.

Close Overlaps — Close all overlap displays.

Previous Display — Toggle between the display presently on the screen and the display most recently called up on the screen.

Display Request — Call up a base display by selecting this item and then type the display name.

Overlap Display Request — Call up an overlap base display by selecting this item and then type the display name.

Right Display — Go forward as many pages as there are in a base display, list or menu. You can also page to a chained display.

Left Display — Go backwards as many pages as there are in a base display, list or menu. You can also page to a chained display.

Direct Selection Box… Call up the **Direct Selection Keys** box. This box contains buttons for 40 direct selection keys. Each button has a key label from the display builder.

This dialog box disappears when a button is pressed.

Direct Selection Keys

Key	Shift Key
1: MBC node 11 s1	21:
2: MBC node 11 s2	22:
3:	23:
4: MasterBatch Process Overview	24:
5:	25:
6:	26:
7:	27:
8:	28:
9: Vuepad Editor	29:
10:	30:
11: HPterm	31:
12:	32:
13:	33:
14:	34:
15:	35:
16:	36:
17:	37:
18:	38:
19:	39:
20:	40:

Figure 4-87. Direct Selection Keys Dialog Box

Dialog Navigation Keys Call up a submenu with two subitems for navigation between the function key sets in the process dialogs.

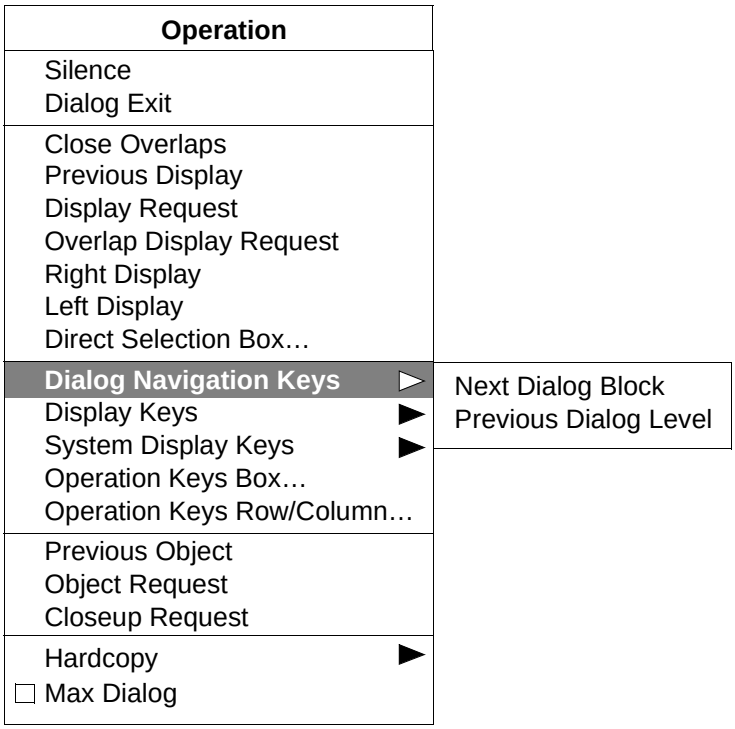


Figure 4-88. Dialog Navigation Keys items in the Operation pop-up menu

Next Dialog Block	Presents the next dynamic function key set in the dialog.
Previous Dialog Level	Presents the dynamic function key set on the top level of the previous dialog.

Display Keys Call up a submenu with six subitems to control the selected display menu or list.

Display Keys can be displayed as an overlap display.

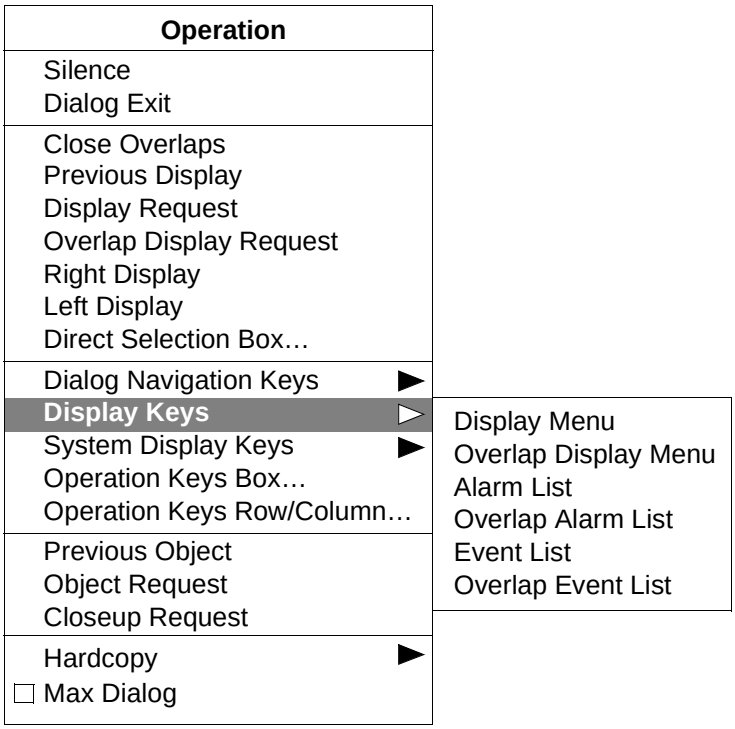


Figure 4-89. Display Keys items in the Operation pop-up menu

Display Menu	Call up the display menu. Use this item to call up a menu containing the display libraries. After you have selected a library, all installed displays within the library are listed.
Overlap Display Menu	Call up the display menu as an overlap display.
Alarm List	Call up the alarm list. The last page in the alarm list is displayed. With the items **Previous Display**, **Right Display** and **Left Display** you can go through the whole list. The list contains the **last 500 alarms**.
Overlap Alarm List	Call up the alarm list as an overlap display.

Event List	Call up the event list. The last page in the event list is displayed. With the items **Previous Display**, **Right Display** and **Left Display** you can go through the whole list. The list contains the **last 1,000 events**.
Overlap Event List	Call up the event list as an overlap display.

System Display Keys	Call up a submenu with six subitems to control system displays. Three are used to control and monitor system status and alarms, one is to start configuration and maintenance functions, and two are used for the software option AdvaCommand Status List. System Display Keys can be displayed as an overlap display.

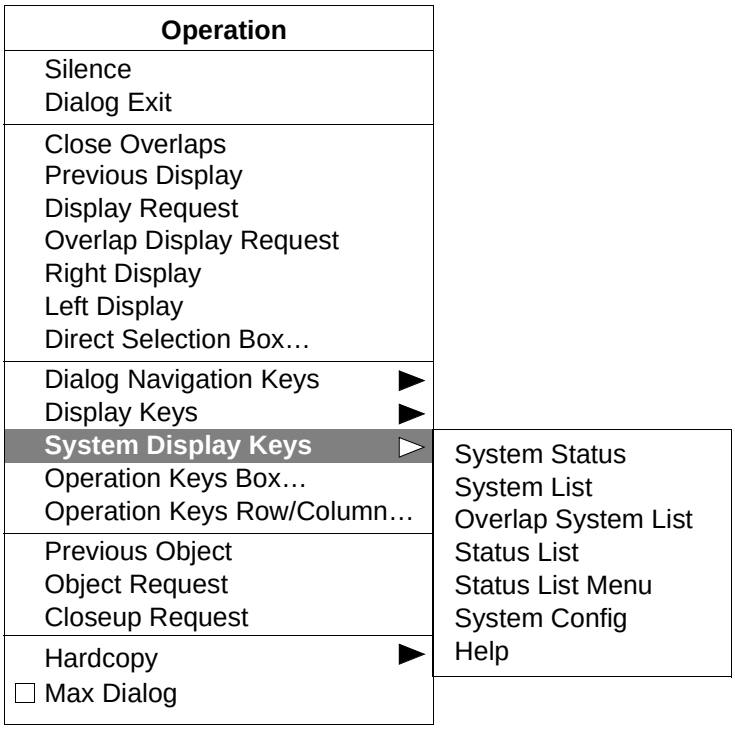


Figure 4-90. System Display Keys items in the Operation pop-up menu

System Status	Presents the status of all nodes (Process and operator stations), the I/O boards, peripheral devices and communication links. Use this item primarily to monitor and troubleshoot in the system.
System List	Presents system alarms related to the control system. Use this item primarily to monitor and troubleshoot in the system.

Overlap System List	Presents the system list as an overlap display.
Status List	This item is used for the **AdvaCommand Status List** (option).
Status List Menu	This item is used for the **AdvaCommand Status List** (option).
System Config	Call up a menu from which you can start configuration and maintenance functions.
Help	Call up a help display if such a display has been assigned to a base display. The help display is always an overlap display.

Operation Keys Box… Call up a box with buttons for the items and subitems from the Operation and Object Handling menus.

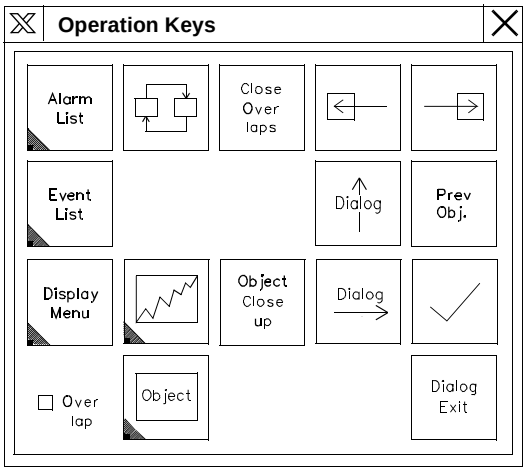


Figure 4-91. Operation Keys Box

Alarm List	Alarm List	Call up the alarm list. The last page in the alarm list is displayed.
Event List	Event List	Call up the event list. The last page in the event list is displayed.
Display Menu	Display Menu	Call up the display menu. Call up a menu containing the display libraries and then select a library, all installed displays within the library are listed.

	Overlap (Togglebutton)	Overlap is tied to five buttons with a black corner in the Operation Keys box. When it is set and one of the items is selected, the display will be displayed as an overlap.
	Previous Display	Toggle between the display presently on the screen and the display most recently called up on the screen.
	Trend Display	Call up the trend display for a marked process object.
	Object Display	Call up the object display for a marked process object.
	Close Overlaps	Close all overlap displays.
	Object Closeup	Call up the object display for a marked process object as a closeup display.
	Left Display	Go backwards as many pages as there are in a base display, list or menu. You can also page to a chained display.
	Previous Dialog Level	Presents the dynamic function key set on the top level of the previous dialog.
	Next Dialog Block	Presents the next dynamic function key set in the dialog.
	Right Display	Go forward as many pages as there are in a base display, list or menu. You can also page to a chained display.

Prev Obj.	Previous Object	Call up the process dialog for the object previously selected.
✓	Acknowledge	Acknowledge the alarm by positioning the **cursor on the object name or symbol** and select the **Acknowledge** item.
Dialog Exit	Dialog Exit	Exit from selected dialog.

Operation Keys Row/Column…

Call up a box with buttons for the items and subitems from the Operation and Object Handling menus arranged either in a **row** or in a **column**.

The buttons available are the same as in the Operation Keys box, but there is also a small button to change the box between Row and Column format.

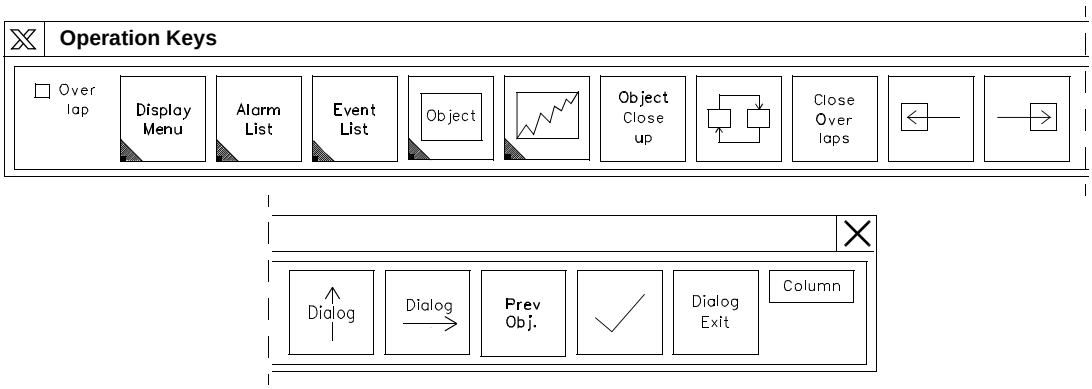


Figure 4-92. Operation Keys Box arranged in a row

Column	Column (Togglebutton)	Switch from the Operation Keys box arranged as a row to the box arranged as a column.

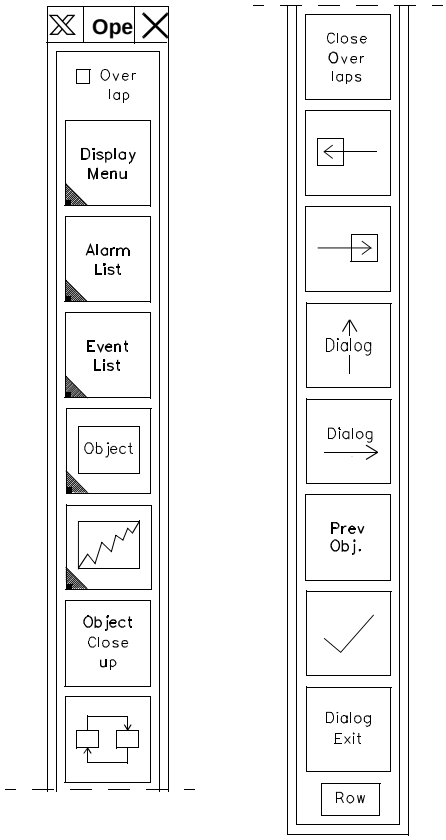


Figure 4-93. Operation Keys Box arranged in a column

Row	Row (Togglebutton)	Switch from the Operation Keys box arranged as a column to the box arranged as a row.

Previous Object	Call up the process dialog for the object previously selected.
Object Request	Select this item, then type the **object name**.
Closeup Request	Select this item, as an overlap display, then type the **object name**.

Hardcopy Call up two subitems, Hardcopy 1 and Hardcopy 2, to select from when printing the screen on a hardcopy printer.

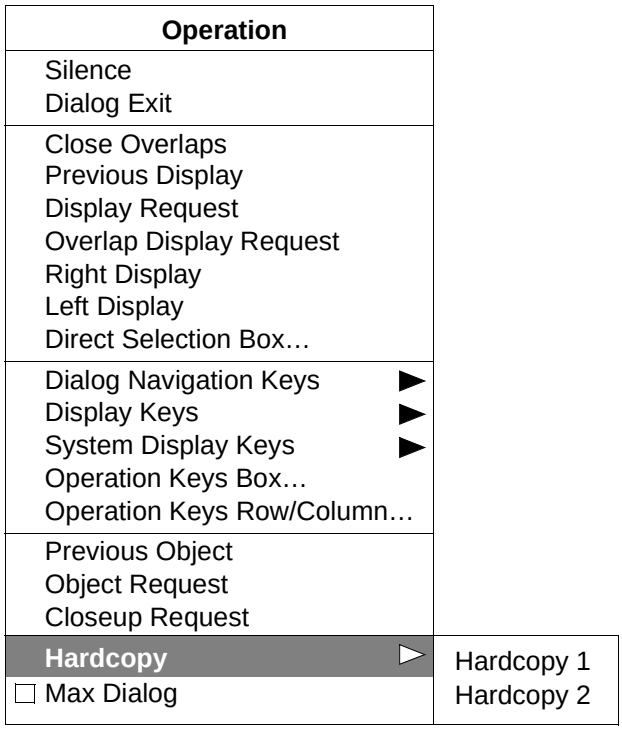


Figure 4-94. Hardcopy items in the Operation pop-up menu

Hardcopy 1 Used for printout of the screen.

Hardcopy 2 Used for printout of the screen.

☐ **Max Dialog** (Togglebutton) Call up the the dynamic function key set for the maximum dialog to give the user full authorization. It is controlled by a password (see Section 3.2.2, Authority).

4.2.4.2 Object Handling menu

Use this menu when you are operating a process object.

If you place the cursor on a display element and press the right mouse button, the menu concerning process object handling appears.

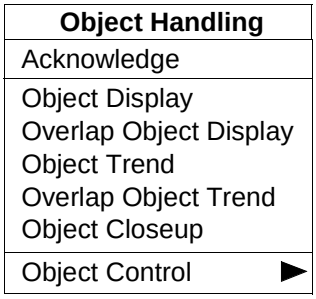


Figure 4-95. Pop-up menu Object Handling for Process Object Control

Acknowledge — Acknowledge the alarm by positioning the **cursor on the object name or symbol** and select the **Acknowledge** item in the Object Handling menu.

Process alarms that are active in the process have a red flashing light.

To silence an audible alarm or an external audible alarm, select the **Silence** item in the Operation menu or select the icon in the screen header.

Object Display — Call up the object display for a marked process object.

The display contains all the information available about the object. The display layout is the same for all objects, but its contents varies depending on the object type. If you select the object, the dialog to control the object is also displayed.

Overlap Object Display — Call up the object display for a marked process object as an overlap display.

Object Trend — Call up the trend display for a marked process object.

Overlap Object Trend — Call up the trend display for a marked process object as an overlap display.

Object Closeup — Call up the closeup display for a marked process object.

Object Control Call up 10 subitems for the basic operations of the selected process objects.

Object Control can be displayed as an overlap display.

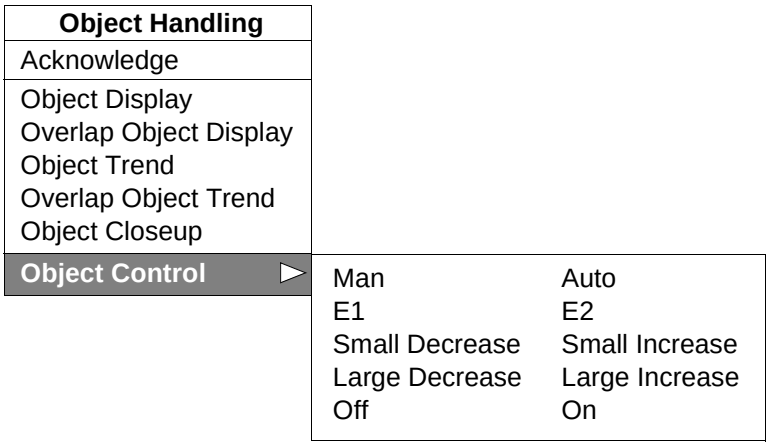


Figure 4-96. Object Control items in the Object Handling pop-up menu

Man	Change mode to manual control.
Auto	Change mode to auto control.
E1	Change mode to external control E1.
E2	Change mode to external control E2.
Small Decrease	Decrease the present output value by 1%.
Small Increase	Increase the present output value by 1%.
Large Decrease	Decrease the present output value by 10%.
Large Increase	Increase the present output value by 10%.
Off	Turn off valves, switches, motors, pumps, etc.
On	Turn on valves, switches, motors, pumps, etc.

Chapter 5 Maintenance

5.1 Preventive Maintenance

Preventive maintenance for the operator station includes saving the installation tape(s) and taking regular backups of the operator station and its Real Time Accelerator Board (RTA). Backups are also taken after major reconfigurations, when new displays are created, etc. You can handle preventive maintenance for the Controllers connected to the same control network using the. You can then use the installation tape(s) and the backups if you must reinstall the operator station, for example after a disk crash.

To begin preventive maintenance, do as follows:

1. Select the subitem **System Config** from the item System Display Keys in the pop-up menu Operation. If you have full authorization (max dialog), the following set of dynamic function keys is displayed:

D1 AdvaCommand…	D2 AdvaBuild…	D3	D4	D5
D6 Settings…	D7 Station…	D8 Maintenance…	D9	D10

Figure 5-1. Dynamic Function Keys - Max Dialog

A key symbol in the screen header indicates that max dialog is valid.

The dynamic function key texts are dimmed and no key symbol is visible if you do not have the necessary authority. The keys cannot be used.

2. Press **F8** or click on the screen button D8 (Maintenance…). The following set of dynamic function keys is presented:

D1 RTA Board Backup	D2 Station Backup	D3	D4 RTA Board Config.	D5 View Diagnostic Log
D6 Object References	D7 Node Broker	D8 Log Database Config	D9	D10

Figure 5-2. Dynamic Function Keys - Max Dialog - D8 Maintenance…

D1 RTA Board Backup

D2 Station Backup

D4 RTA Board Configuration

D5	View Diagnostic Log *(if Diagnostic Log is on in Station Setting and Function Restart has been done since set)*
D6	Object References
D7	Node Broker
D8	Log Database Configuration

Backup Levels

The numbers within brackets in Figure 5-3 refer to the backup levels listed below. The disks in Figure 5-3 are the operator station internal disks.

(1)	Level 1	Backup of Real Time Accelerator (RTA) Board
(2)	Level 2	Backup and Restore of operator station Disk Data

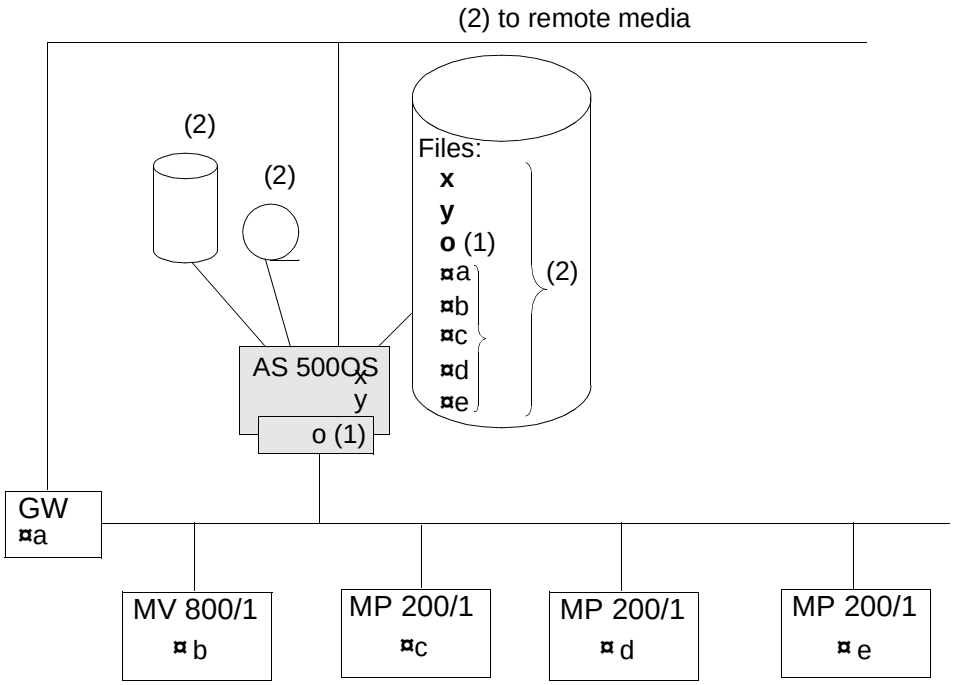


Figure 5-3. Backup levels

Backups are running in on-line mode, that is you do not have to set the operator station in any configuration mode to perform the backups, but some restore alternatives require you to stop or restart the operator station software.

At backup, a standard name, including operator station network and node id, is given to a generated backup file. The backup identity is used at restore to give you information about the contents of different backups.

Prior to any restore, a dialog box is presented on screen for you to confirm the requested restore.

5.1.1 Backup and Restore of Real Time Accelerator Board

Maintenance…D1 RTA Board Backup

You can back up the Real Time Accelerator (RTA) board's configurable data to operator station disk files. The backup is always performed on request.

The RTA configurable data is stored as a file on the local operator station disk. The old RTA backup is deleted from the operator station disk when a new version is saved on disk. Only one version of the Real Time Accelerator data is available on disk.

A restore of the RTA configuration data is always performed automatically at operator station start up.

Backup of the RTA board is always executed in the background.

Press **F1** or click on the screen button D1 (RTA Board Backup) to start the backup.

5.1.2 Backup and Restore of Operator Station Disk Data

Maintenance…D2 Station Backup

The purpose of Station Backup is to make local or remote backup and restore on all types of application data.

Station backup is always taken from a station with a tape drive connected. When a backup is taken, the station that is backed up is the source station.

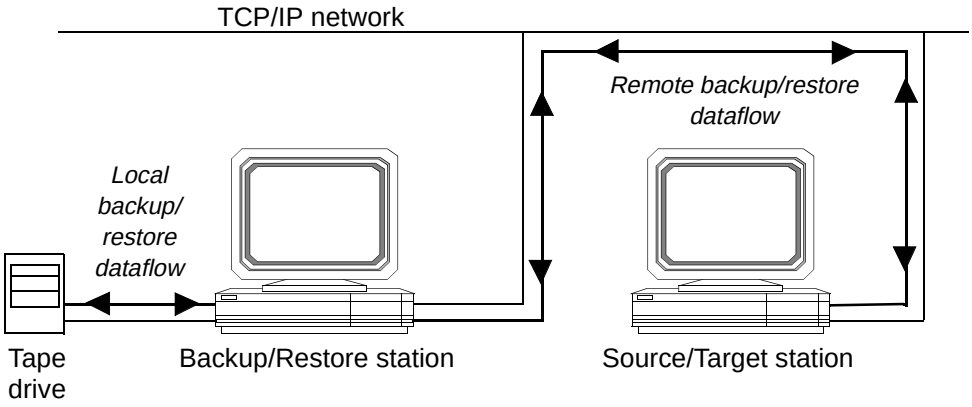


Figure 5-4. Station backup/restore

When restoring a station, the restore operation is controlled by the backup station. The station that is being restored is now called the target station. When making a local restore on a station, the backup station is the target station. There are two restore types that demands that the target station is in a certain Backup/Restore mode.

5.1.2.1 Station Backup Main Dialog

A Station Backup start request (press **F2** or click on the screen button D2 (Station Backup)) will generate a dialog like the one below.

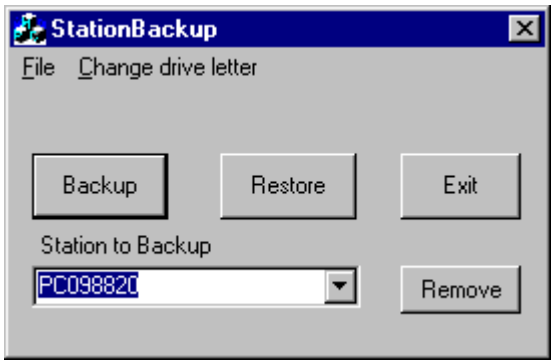


Figure 5-5. Station Backup main dialog

In the Station Backup main dialog you can:

- Add a station name to the combo-box
- Remove a station name from the combo-box
- Change share drive letter
- Make a Local backup of a station
- Make a Remote backup of a station
- Make a Local restore on a station
  - as a Configurable restore
  - as an Independent restore
  - as an Interactive restore
- Make a Remote restore on a station
  - as a Configurable restore
  - as an Independent restore
  - as an Interactive restore

5.1.2.2 Add a Station Name to the Combo-box

The combo-box "Station to Backup" contains a list of all stations that has been successfully backed up. If it is the first time and/or the local station is the only station that has been backed up, that list will only contain the local machine's computer name.

When backing up a new station, just type the station's computer name in the combo-box and click on the "Backup" button.

5.1.2.3 Remove a Station Name from the Combo-box

If a station has been successfully backed up once, it will always exist in the list, but it will not be automatically removed from the list if the computer changes name, is moved to another network etc. Therefore it has to be removed manually. Select the station from the list and click on the "Remove" button. It will not affect on anything else than the list.

5.1.2.4 Change Share Drive Letter

All stations have five drive letters assigned to Station Backup, one per each share to be backed up. When Station Backup starts for the first time it asks for those drive letters and stores the drive letters in the Windows NT Registry. But if you need to change an assigned drive letter, select the drive letter from the "Change Drive Letter" menu.

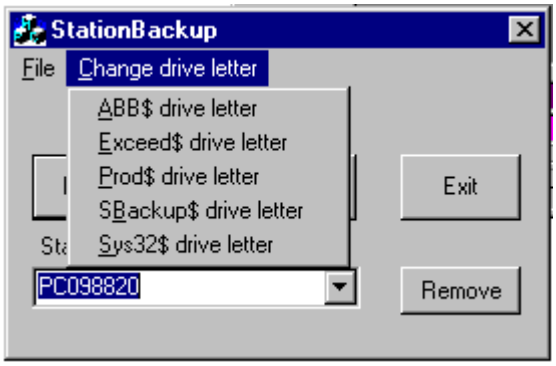


Figure 5-6. Change Drive Letter in the Station Backup main dialog

A dialog box for the selected drive letter appears:

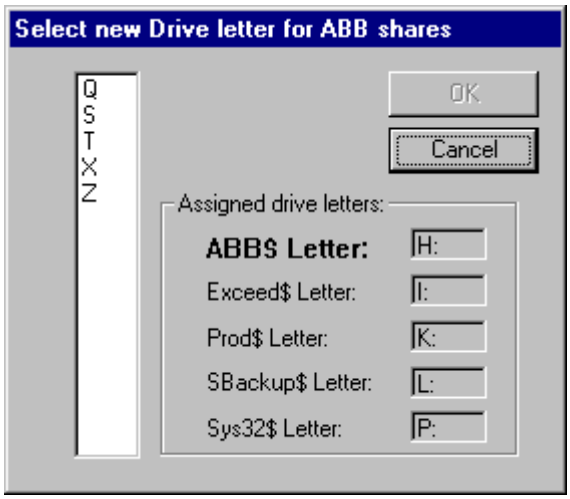


Figure 5-7. Change drive letter dialog for the ABB$ share

It is the same type of dialog box as you use when you first assign the drive letters to the five shares (see Section 3.3.19, Station Backup Configuration). The only difference is that the "Cancel" button is enabled.

5.1.2.5 Local Backup of a Station

A local backup is made on the local station. The station must have a tape drive connected to be able to perform a local backup. The station can run in operator station mode during the backup.

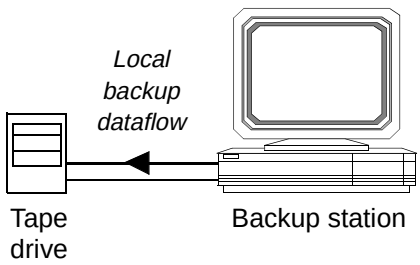


Figure 5-8. Local backup

To make a local backup of a station, do as follows:

1. Insert a tape (preferably an empty one) into the tape drive.

NOTE

Previously backed up data on a backup tape is overwritten without any warning.

2. Press **F2** or click on the screen button D2 (Station Backup) in the Maintenance dialog.

NOTE

You can not select the Station Backup without full authorization (Max dialog).

The Station Backup main dialog appears. The local station's name is default in the "Station to Backup" combo-box.

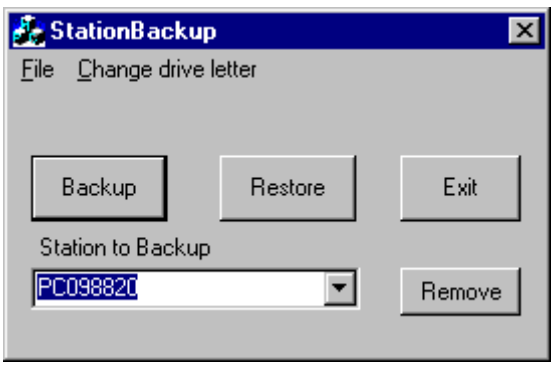


Figure 5-9. Station Backup main dialog

3. Click on the "Backup" button.

   Station Backup starts the Backup utility one time per backup set. The Backup utility will be started in minimized mode.

   For now there are 16 backup sets:

   – 1 backup set for tape configuration
   – 5 complete backup sets for all station data (one per share)
   – 5 backup sets for independent station data
   – 5 backup sets for configurable station data.

   The backup time is approximatly 1.5 hours and runs in the background.

   A confirmation box appears when the backup is completed.

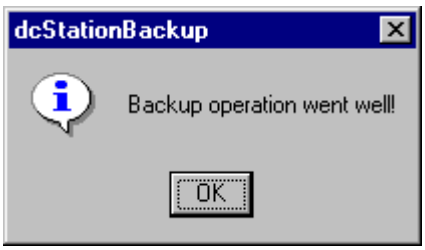


Figure 5-10. Confirmation box after a complete backup

4. Click on the "OK" button.
5. Click on the "Exit" button to close the Station Backup main dialog.

Backup Status

If you want to see the backup status, do as follows:

1. Hold down the **Alt** key and press the **Tab** key once to call up a window with the programs that are currently running on your computer. Press the **Tab** key a number of times until you find the Backup utility, then release the the **Alt** key.
2. The Backup utility and the following type of dialog box appears.

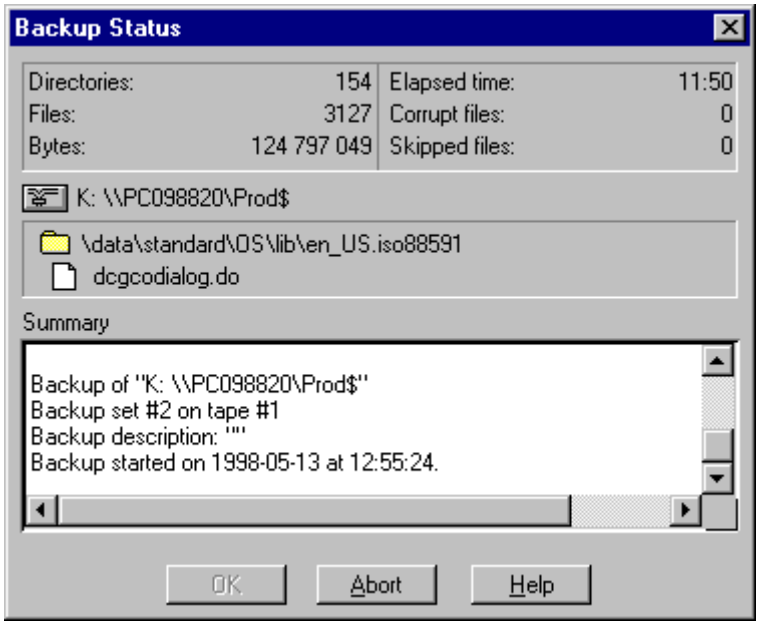


Figure 5-11. Backup Status dialog box

Abort a Backup

If you want to abort the backup, do as follows:

1. Click on the "Abort" button in the Backup Status dialog box.

   A confirmation box appears.

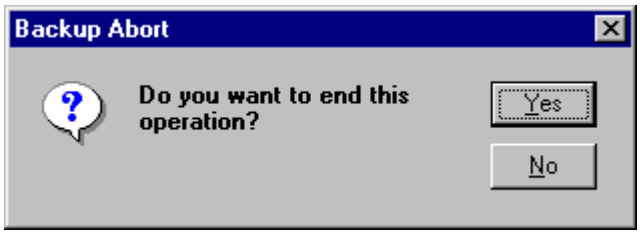


Figure 5-12. Backup Abort confirmation box

2. Click on the "Yes" button.

   Another confirmation box appears.

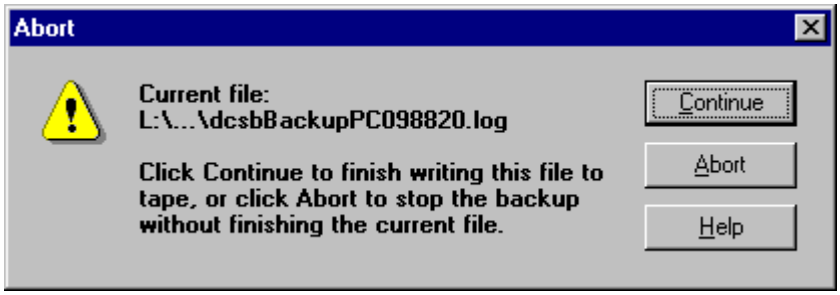

Abort
Current file:
L:\...\dcsbBackupPC098820.log
Click Continue to finish writing this file to tape, or click Abort to stop the backup without finishing the current file.
Continue
Abort
Help

Figure 5-13. Second confirmation box at Backup Abort

3. Click on the "Abort" button.

   The backup is immediately aborted.

   Do not press the "Continue" button since it has no use in Station Backup.

Another confirmation box appears.

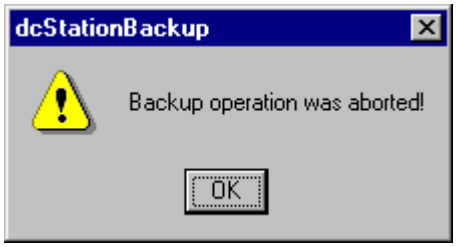


Figure 5-14. Third confirmation box at Backup Abort

4. Click on the "OK" button.

Error Messages

When the "Backup" button is pressed, Station Backup checks that the five shares that the station needs have been named. If at least one of the shares does not exist, the Station Backup warns about that and stops the backup task.

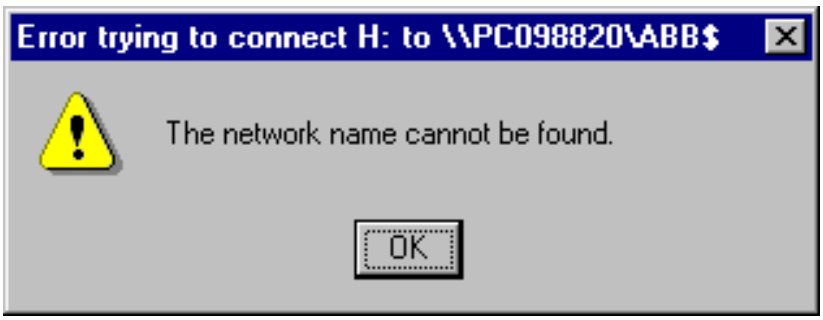


Figure 5-15. Disk mapping error message for the ABB$ share

To assign/change a drive letter for a share, see Section 5.1.2.4, Change Share Drive Letter.

5.1.2.6 Remote Backup of a Station

Remote station backup is always taken from a backup station, that is a station with a connected tape drive. This station can take backups from itself and other station. When a backup is taken, the station that is backed up, is the source station.

NOTE

Make sure that the .rhost and Host files of both stations include each other's addresses as mentioned in Section 3.3.19.2, Configuration of the Hosts and .rhosts files.

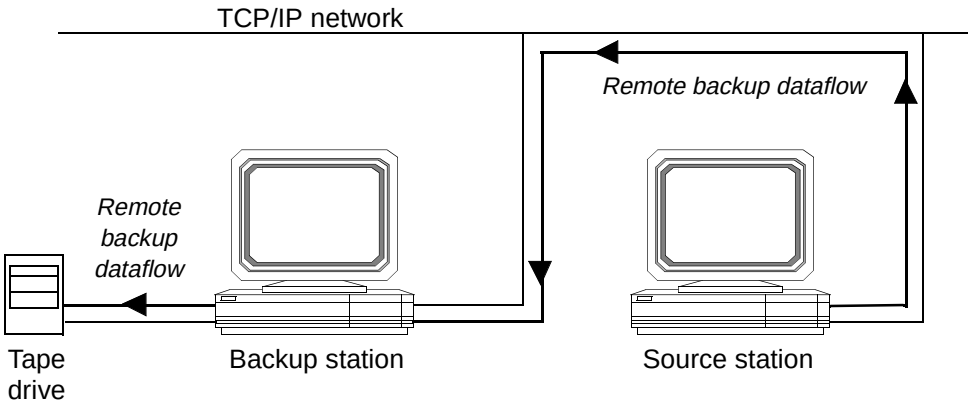


Figure 5-16. Remote backup

To make a remote backup of a station, do as follows:

1. Insert a tape (preferably an empty one) into the tape drive.

   NOTE

   Previously backed up data on a backup tape is overwritten without any warning.

2. Press **F2** or click on the screen button D2 (Station Backup) in the Maintenance dialog.

   NOTE

   You can not select the Station Backup without full authorization (Max dialog).

   The Station Backup main dialog appears. The local station's name is default in the "Station to Backup" combo-box.

3. Select or type a new station name into the "Station to Backup" combo-box and click on the "Backup" button.

   Station Backup starts the Backup utility one time per backup set. The Backup utility will be started in minimized mode.

   NOTE

   It is the backup station's drive letter configuration that is stored on the tape (not the source station's).

   The backup time is approximatly 1.5 hours and runs in the background.

   A confirmation box appears when the backup is completed.

4. Click on the "OK" button.
5. Click on the "Exit" button to close the Station Backup main dialog.

5.1.2.7 Local Restore on a Station

A local restore is made on the local station. The station must have a tape drive connected to be able to perform a local restore. The station can be running in operator station mode during interactive restore, otherwise, it has to be started in Backup/Restore mode. The restore station is also the target station during a local restore.

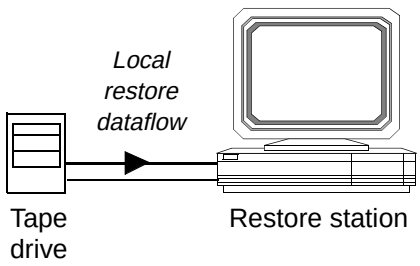


Figure 5-17. Local restore

When restoring a station, the purpose is to restore application data from a backup tape. The Tape does not necessarilly need to be a backup tape from the target station.

There are three restore alternatives:

Configurable restore	Is used to restore all application data into the operator station. The backup tape must come from the same station. The station must be started up in Backup/Restore mode. **NOTE** If a configurable restore is done from a tape which does not come from the same station vital data will be corrupted.
Independent restore	Is used to restore all application data except node dependent data into the operator station. The backup tape must come from a station on the same network. All resolved objects will also be restored. The station must be started up in Backup/Restore mode. **NOTE** If an independent restore is done from a tape which does not come from the same network, the station will not start up on the network any more.
Interactive restore	Is mainly used for transferring or restoring displays. It is also possible to transfer or restore selected files. The data can be restored while the target station is running as an operator station.

Local Configurable or Independent Restore

To make a local configurable or independent restore of a station, do as follows:

1. Insert a tape into the tape drive.
2. Make a function restart and select "Backup/Restore mode" in the Workstation Mode window at startup.

   The Station Backup main dialog appears. The local station's name is default in the "Station to Backup" combo-box.

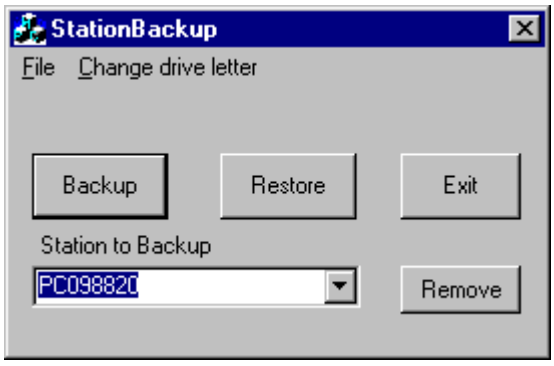


Figure 5-18. Station Backup main dialog

3. Click on the "Restore" button.

   The Select Restore Operation dialog box appears.

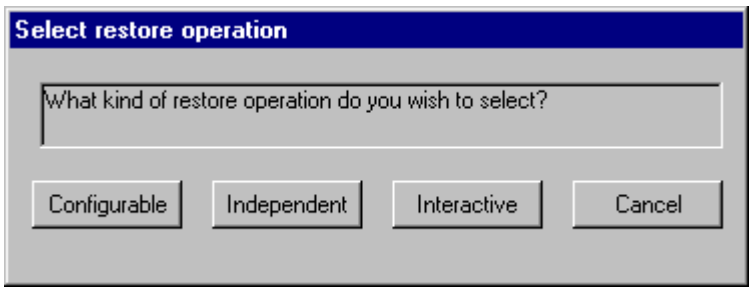


Figure 5-19. Select Restore Operation dialog box

4. Click on either the "Configurable" or "Independent" button.

   The Station Backup starts the Backup utitlity and a help window with restore instructions appears.

5. If you are not sure about how the drive letters are configured on the tape, follow the instructions in the help window.

WARNING

It is very important that the Drive letter/Share configuration is consistent. The station that performs the restore must have the same Drive letter/Share configuration as the backup tape. If not, the backup restore will corrupt the file system.

6. If the drive letters are OK, double-click on the minimized window "Tapes" in the lower left corner of the backup utitlity window.

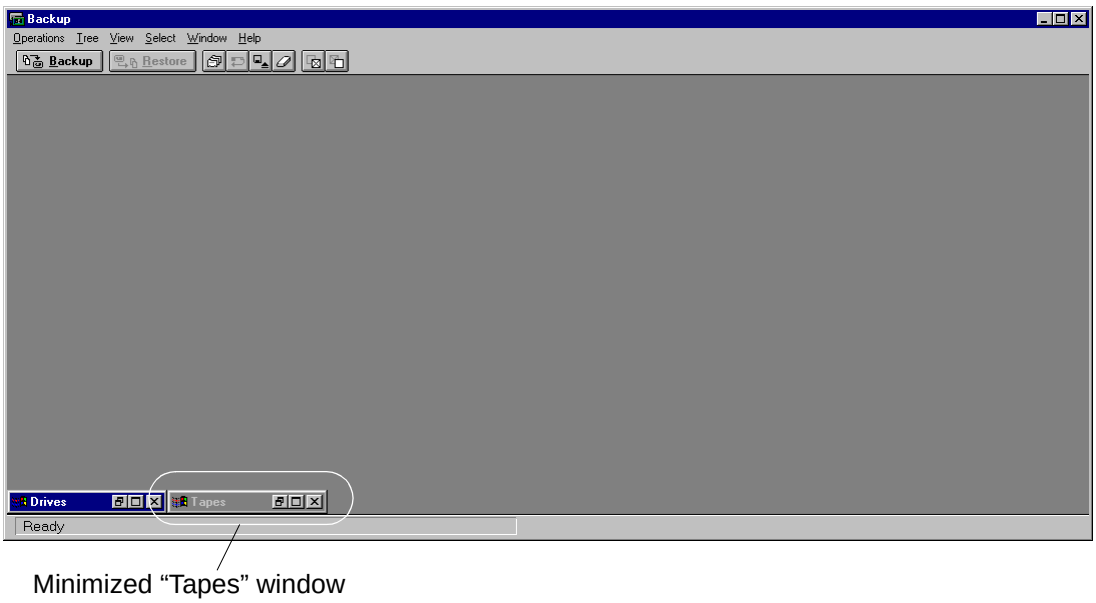


Figure 5-20. Start display in the Backup utitlity

The "Tapes" window expands in the Backup utitlity window.

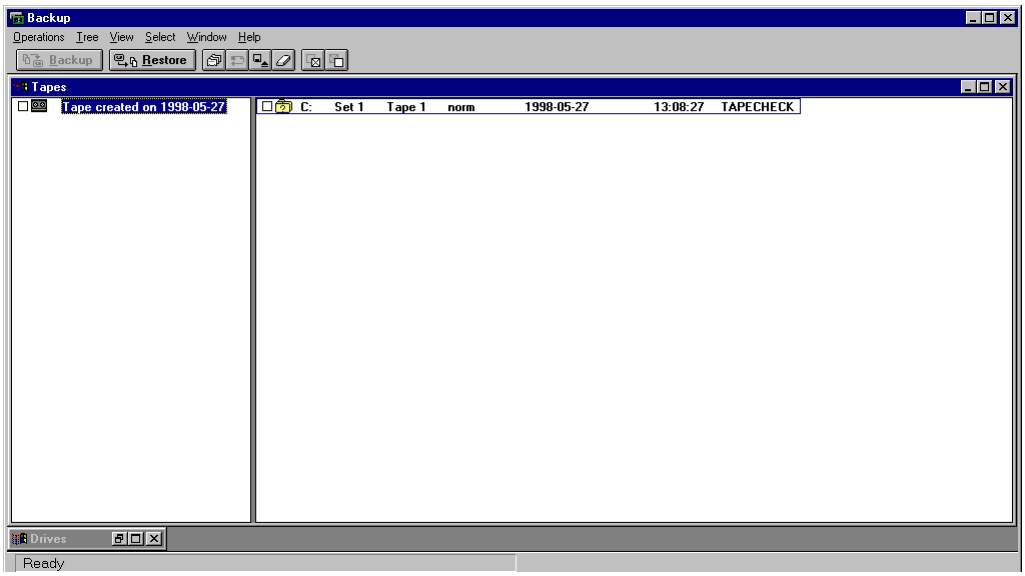


Figure 5-21. Tapes window with only the first backup set displayed

7. In the "Tapes" window's left field double-click on the text "Tape created YYYY-MM-DD" and all backup sets on the tape are displayed in the window's right field.

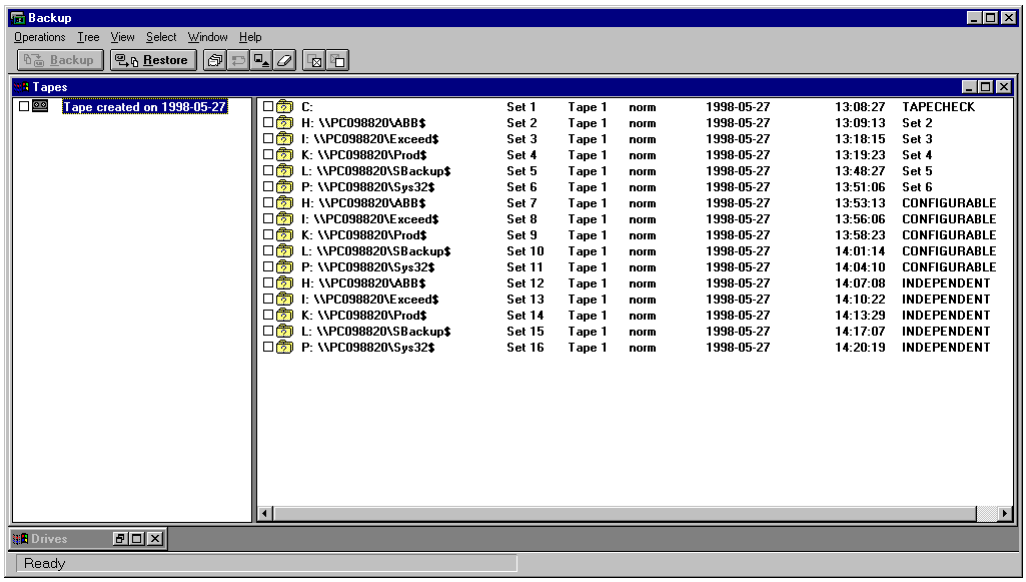

Backup
Operations Tree View Select Window Help
Backup Restore
Tapes
Tape created on 1998-05-27
C: Set 1 Tape 1 norm 1998-05-27 13:08:27 TAPECHECK
H: \\PC098820\ABB$ Set 2 Tape 1 norm 1998-05-27 13:09:13 Set 2
I: \\PC098820\Exceed$ Set 3 Tape 1 norm 1998-05-27 13:18:15 Set 3
K: \\PC098820\Prod$ Set 4 Tape 1 norm 1998-05-27 13:19:23 Set 4
L: \\PC098820\SBackup$ Set 5 Tape 1 norm 1998-05-27 13:48:27 Set 5
P: \\PC098820\Sys32$ Set 6 Tape 1 norm 1998-05-27 13:51:06 Set 6
H: \\PC098820\ABB$ Set 7 Tape 1 norm 1998-05-27 13:53:13 CONFIGURABLE
I: \\PC098820\Exceed$ Set 8 Tape 1 norm 1998-05-27 13:56:06 CONFIGURABLE
K: \\PC098820\Prod$ Set 9 Tape 1 norm 1998-05-27 13:58:23 CONFIGURABLE
L: \\PC098820\SBackup$ Set 10 Tape 1 norm 1998-05-27 14:01:14 CONFIGURABLE
P: \\PC098820\Sys32$ Set 11 Tape 1 norm 1998-05-27 14:04:10 CONFIGURABLE
H: \\PC098820\ABB$ Set 12 Tape 1 norm 1998-05-27 14:07:08 INDEPENDENT
I: \\PC098820\Exceed$ Set 13 Tape 1 norm 1998-05-27 14:10:22 INDEPENDENT
K: \\PC098820\Prod$ Set 14 Tape 1 norm 1998-05-27 14:13:29 INDEPENDENT
L: \\PC098820\SBackup$ Set 15 Tape 1 norm 1998-05-27 14:17:07 INDEPENDENT
P: \\PC098820\Sys32$ Set 16 Tape 1 norm 1998-05-27 14:20:19 INDEPENDENT
Drives
Ready

Figure 5-22. Tapes window when all backup sets are displayed

8. Select all backup sets with either the description CONFIGURABLE or INDEPENDENT (depending on whether you want to make a configurable or an independent restore), by clicking in the corresponding backup sets' check boxes to the left in the "Tapes" window's right field.

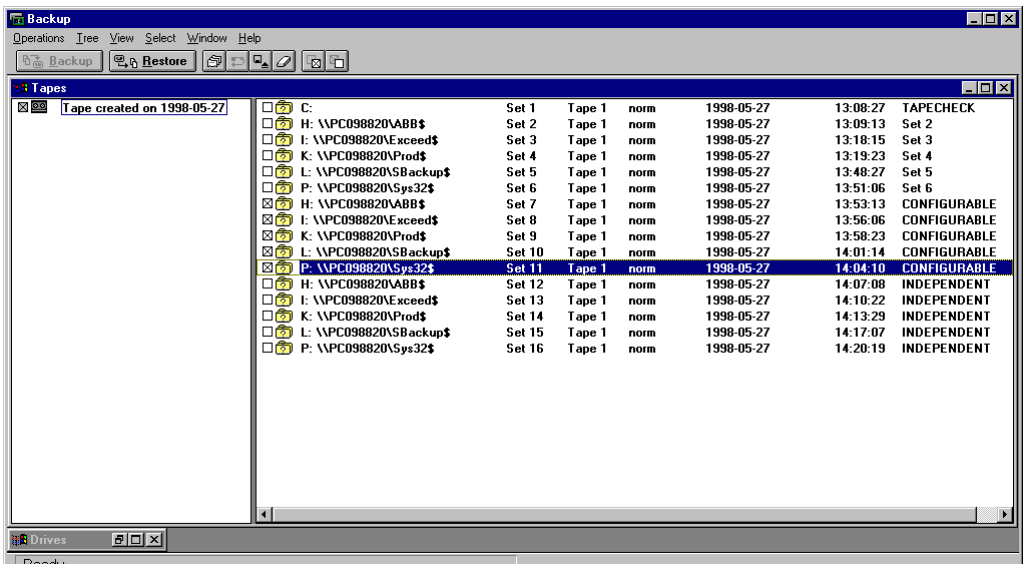

Backup
Operations Tree View Select Window Help
Backup Restore
Tapes
Tape created on 1998-05-27
C: Set 1 Tape 1 norm 1998-05-27 13:08:27 TAPECHECK
H: \\PC098820\ABB$ Set 2 Tape 1 norm 1998-05-27 13:09:13 Set 2
I: \\PC098820\Exceed$ Set 3 Tape 1 norm 1998-05-27 13:18:15 Set 3
K: \\PC098820\Prod$ Set 4 Tape 1 norm 1998-05-27 13:19:23 Set 4
L: \\PC098820\SBackup$ Set 5 Tape 1 norm 1998-05-27 13:48:27 Set 5
P: \\PC098820\Sys32$ Set 6 Tape 1 norm 1998-05-27 13:51:06 Set 6
H: \\PC098820\ABB$ Set 7 Tape 1 norm 1998-05-27 13:53:13 CONFIGURABLE
I: \\PC098820\Exceed$ Set 8 Tape 1 norm 1998-05-27 13:56:06 CONFIGURABLE
K: \\PC098820\Prod$ Set 9 Tape 1 norm 1998-05-27 13:58:23 CONFIGURABLE
L: \\PC098820\SBackup$ Set 10 Tape 1 norm 1998-05-27 14:01:14 CONFIGURABLE
P: \\PC098820\Sys32$ Set 11 Tape 1 norm 1998-05-27 14:04:10 CONFIGURABLE
H: \\PC098820\ABB$ Set 12 Tape 1 norm 1998-05-27 14:07:08 INDEPENDENT
I: \\PC098820\Exceed$ Set 13 Tape 1 norm 1998-05-27 14:10:22 INDEPENDENT
K: \\PC098820\Prod$ Set 14 Tape 1 norm 1998-05-27 14:13:29 INDEPENDENT
L: \\PC098820\SBackup$ Set 15 Tape 1 norm 1998-05-27 14:17:07 INDEPENDENT
P: \\PC098820\Sys32$ Set 16 Tape 1 norm 1998-05-27 14:20:19 INDEPENDENT
Drives

Figure 5-23. All configurable backup sets selected for configurable restore

You cannot select all these backup sets with a single command/action. Instead, you have to click in each set's check box.

9. Click on the "Restore" button in the Backup utitlity window.

   A dialog box showing the restore information for the first backup set appears over the Backup utitlity window.

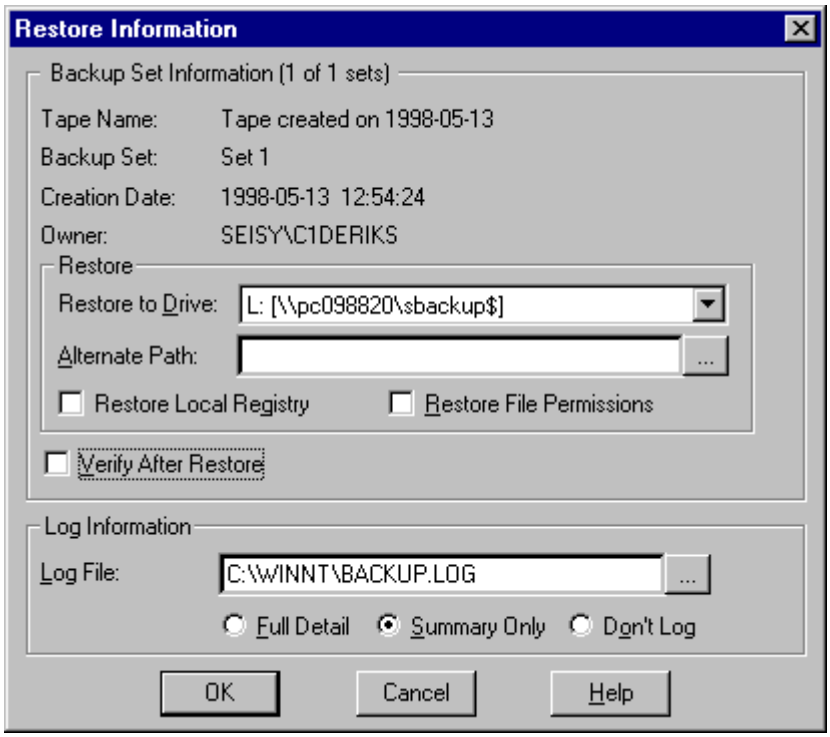


Figure 5-24. Restore Information dialog box

A new Restore Information dialog box will appear for every backup set you have selected to restore.

10. Click on the "OK" button to start the restore action of the backup set.

    The dialog box is closed.

At the same time a dialog box showing the restore status appears over the Backup utitlity window.

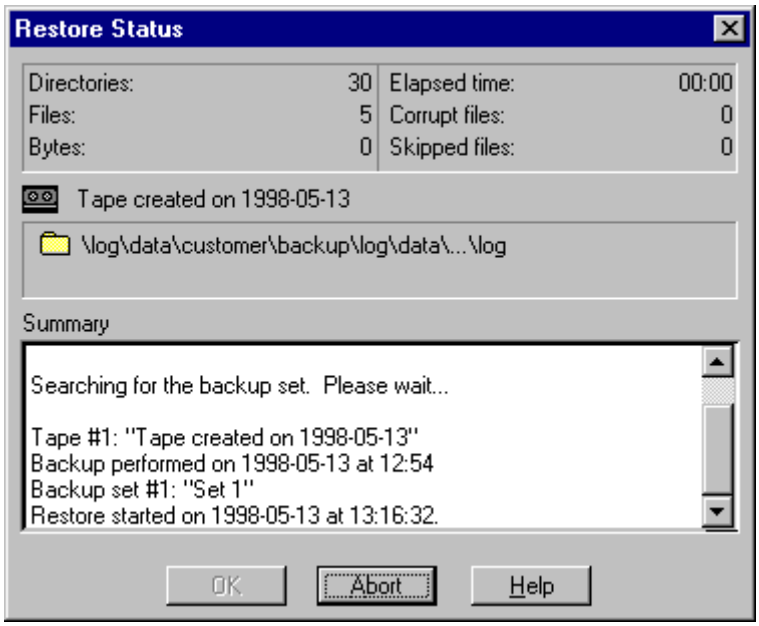


Figure 5-25. Restore Status dialog box

Since Station Backup already have mapped the disk to the right shares on the right station, all data will be restored to the right place.

If a file on the backup tape already exist on the operator station, a confirmation box appears in which you are asked to confirm the file replacement.

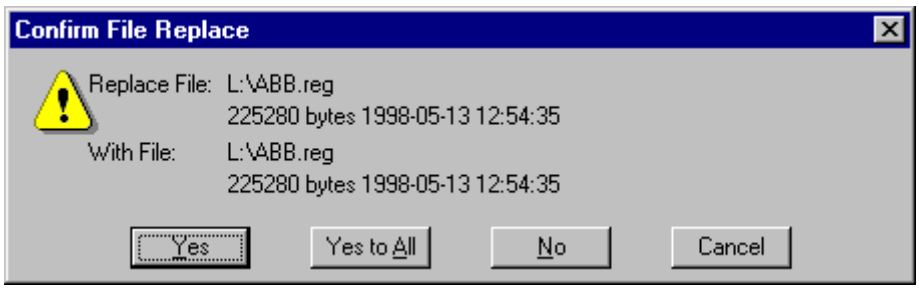


Figure 5-26. Confirmation box for file replacements

11. Click on the "Yes to All" button on all those confirmation dialog boxes that appear during the restore.
12. When all selected backup data have been restored into the disk, the Restore Status dialog box shows the message "The operation was successfully completed.".

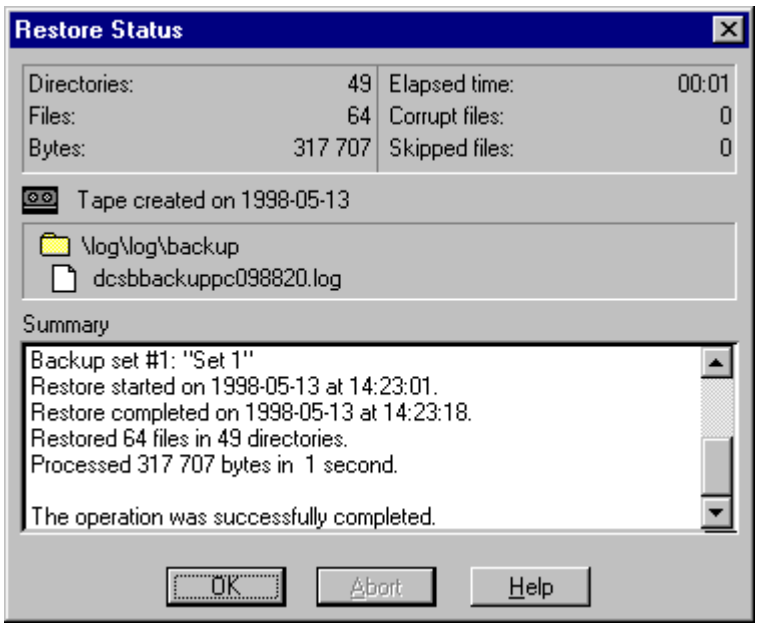


Figure 5-27. Restore Status dialog box when the backup restore has been completed

13. Click on the "OK" button.
14. Quit the Backup utility by selecting Exit from the Operations menu or by clicking in the X button at the far right of the title bar.

    A number of scripts will be run to complete the restore operation. The restore operation is completed when all buttons and menus in the Station Backup main dialog are selectable again.
15. Click on the "Exit" button in the Station Backup main dialog and the operator station will start up again.

Local Interactive Restore

Example:

When you make a local interactive restore and only want to copy the displays from the tape into the disk, do as follows:

1. Insert a tape into the tape drive.
2. Press **F2** or click on the screen button D2 (Station Backup) in the Maintenance dialog.

NOTE

You can not select the Station Backup without full authorization (Max dialog).

The Station Backup main dialog appears. The local station's name is default in the "Station to Backup" combo-box.

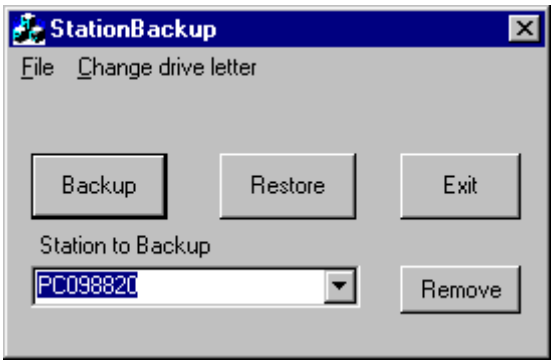


Figure 5-28. Station Backup main dialog

3. Click on the "Restore" button.

   The Select Restore Operation dialog box appears.

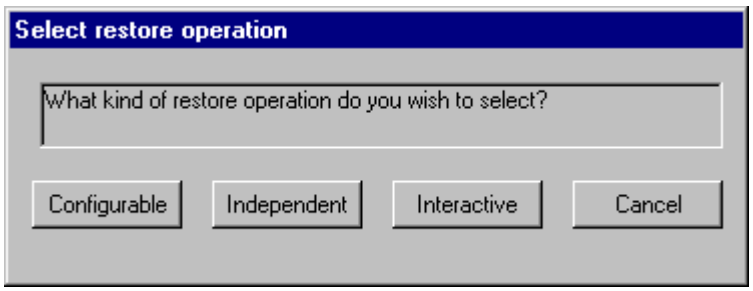


Figure 5-29. Select Restore Operation dialog box

4. Click on the "Interactive" button.

   The Station Backup starts the Backup utitlity and a help window with restore instructions appears.

5. If you are not sure about how the drive letters are configured on the tape, follow the instructions in the help window.

   WARNING

   It is very important that the Drive letter/Share configuration is consistent. The station that performs the restore must have the same Drive letter/Share configuration as the backup tape. If not, the backup restore will corrupt the file system.

6. Double-click on the minimized window "Tapes" in the lower left corner of the Backup utitlity window.

   The "Tapes" window expands in the Backup utitlity window.

7. In the "Tapes" window's left field double-click on the text "Tape created YYYY-MM-DD" and all backup sets on the tape are displayed in the window's right field.

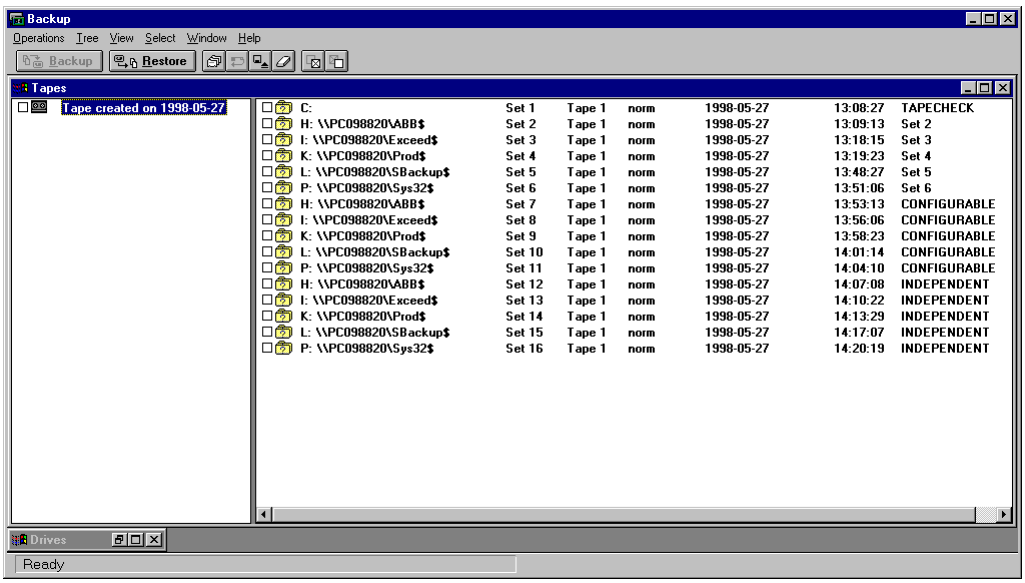

Backup
Operations Tree View Select Window Help
Backup
Restore
Tapes
Tape created on 1998-05-27
C: Set 1 Tape 1 norm 1998-05-27 13:08:27 TAPECHECK
H: \\PC098820\ABB$ Set 2 Tape 1 norm 1998-05-27 13:09:13 Set 2
I: \\PC098820\Exceed$ Set 3 Tape 1 norm 1998-05-27 13:18:15 Set 3
K: \\PC098820\Prod$ Set 4 Tape 1 norm 1998-05-27 13:19:23 Set 4
L: \\PC098820\SBackup$ Set 5 Tape 1 norm 1998-05-27 13:48:27 Set 5
P: \\PC098820\Sys32$ Set 6 Tape 1 norm 1998-05-27 13:51:06 Set 6
H: \\PC098820\ABB$ Set 7 Tape 1 norm 1998-05-27 13:53:13 CONFIGURABLE
I: \\PC098820\Exceed$ Set 8 Tape 1 norm 1998-05-27 13:56:06 CONFIGURABLE
K: \\PC098820\Prod$ Set 9 Tape 1 norm 1998-05-27 13:58:23 CONFIGURABLE
L: \\PC098820\SBackup$ Set 10 Tape 1 norm 1998-05-27 14:01:14 CONFIGURABLE
P: \\PC098820\Sys32$ Set 11 Tape 1 norm 1998-05-27 14:04:10 CONFIGURABLE
H: \\PC098820\ABB$ Set 12 Tape 1 norm 1998-05-27 14:07:08 INDEPENDENT
I: \\PC098820\Exceed$ Set 13 Tape 1 norm 1998-05-27 14:10:22 INDEPENDENT
K: \\PC098820\Prod$ Set 14 Tape 1 norm 1998-05-27 14:13:29 INDEPENDENT
L: \\PC098820\SBackup$ Set 15 Tape 1 norm 1998-05-27 14:17:07 INDEPENDENT
P: \\PC098820\Sys32$ Set 16 Tape 1 norm 1998-05-27 14:20:19 INDEPENDENT
Drives
Ready

Figure 5-30. Tapes window when all backup sets are displayed

8. Select a backup set, in this example the one with the description "Set 2", from the source station's "Prod$" " share by double-clicking on the line in the "Tapes" window's right field.

9. Select the subdirectory "display" (data -> customer -> OS -> display) by clicking in the check box to the left in the "Tapes" window's right field.

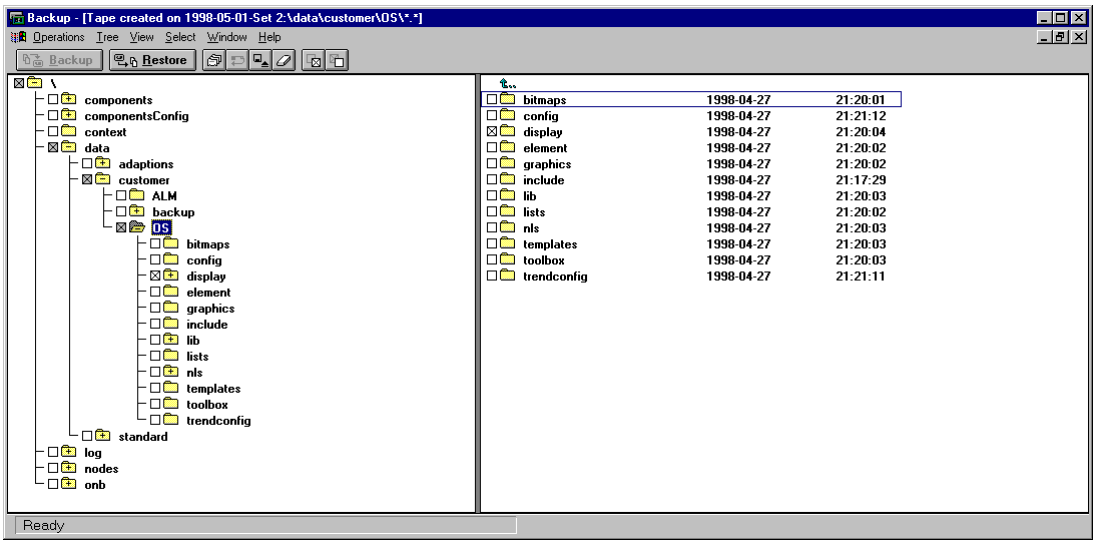


Figure 5-31. Interactive backup data selected in a maximized Tapes window

10. Click on the "Restore" button in the Backup utitlity window.

    A dialog box showing the restore information for the first backup set appears over the Backup utitlity window.

11. Click on the "OK" button to start the restore action of the backup set.

The dialog box is closed. At the same time a dialog box showing the restore status appears over the backup utitlity window.

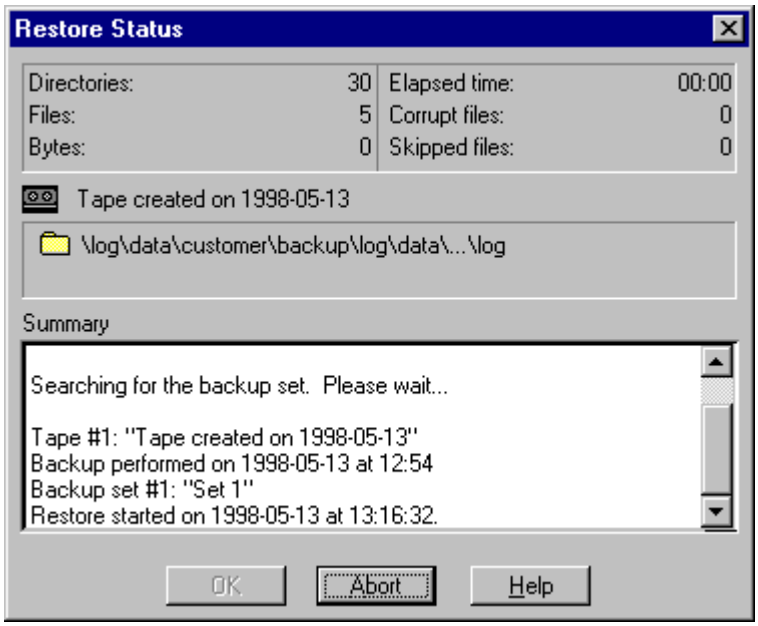


Figure 5-32. Restore Status dialog box

If a file on the backup tape already exist on the AdvaCommand station, a confirmation box appears in which you are asked to confirm the file replacement (see Figure 5-26).

12. Click on the "Yes to All" button on all those confirmation dialog boxes that appear during the restore.
13. When all selected backup data have been restored into the disk, the Restore Status dialog box shows the message "The operation was successfully completed."
14. Click on the "OK" button.
15. Quit the Backup utility and the Station Backup by selecting Exit from the Operations menu or by clicking in the X button at the far right of the title bar.

    A number of scripts will be run to complete the restore operation. The restore operation is completed when all buttons and menus in the Station Backup main dialog are selectable again.
16. Click on the "Exit" button in the Station Backup main dialog.

5.1.2.8 Remote Restore on a Station

A remote restore is when a restore station is making a restore on another station. The station that is being restored is called the target station and the restore operation is controlled by the restore station.

NOTE

Make sure that the .rhost and Host files of both stations include each other's addresses as mentioned in Section 3.3.19.2, Configuration of the Hosts and .rhosts files.

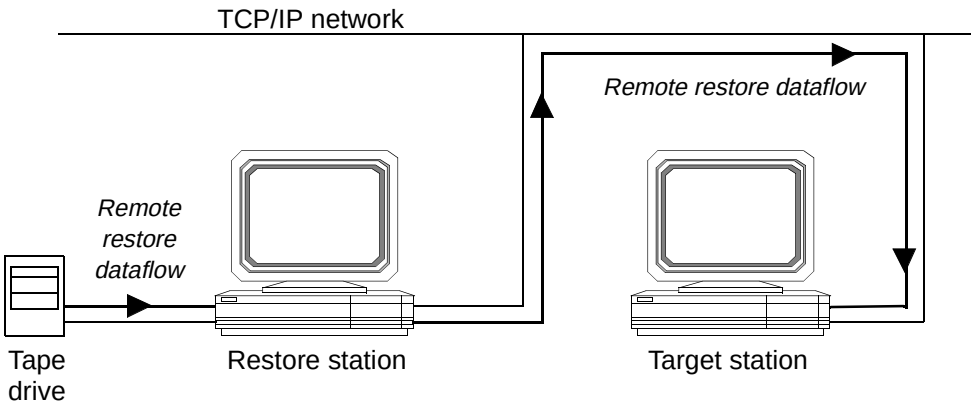


Figure 5-33. Remote restore

The restore station can be run as usual, but the target station must be run in Backup/Restore mode if it is a remote Independent/Configurable restore that shall be done.

When restoring a station, the purpose is to restore application data from a backup tape. For independent and interactive restore the tape does not necessarily need to be a backup tape from the target station. The restore station controls the restore operation.

There are three restore alternatives:

Configurable restore	Is used to restore all application data into the operator station. The backup tape must come from the same station. The target station must be started up in Backup/Restore mode. **NOTE** If a configurable restore is done from a tape which does not come from the same station vital data will be corrupted.
Independent restore	Is used to restore all application data except node dependent data into the operator station. The backup tape must come from a station on the same network. All resolved objects will also be restored. The target station must be started up in Backup/Restore mode. **NOTE** If an independent restore is done from a tape which does not come from the same network, the station will not start up on the network any more.
Interactive restore	Is mainly used for transferring or restoring displays. It is also possible to transfer or restore selected files. The data can be restored while the target station is running as an operator station.

Remote Configurable or Independent Restore

The target station must be started up in Backup/Restore mode when making a remote configurable or independent restore.

To make a remote configurable or an independent restore of a station, do as follows:

In the Target station:

1. Make a function restart on the target station and select "Backup/Restore mode" in the Workstation Mode window at startup.

   The Station Backup main dialog appears.

In the Restore station:

2. Put in the restore tape in the restore station's tape drive.

   Wait until all actions are ready in the target station.

3. Press **F2** or click on the screen button D2 (Station Backup) in the Maintenance dialog.

   NOTE

   You can not select the Station Backup without full authorization (Max dialog).

   The Station Backup main dialog appears.

4. Select or type the target station's name in the "Station to Backup" combo-box and click on the "Restore" button.

   The Select Restore Operation dialog box appears.

5. Either click on the "Independent" or "Configurable" button.

   The Station Backup starts the Backup utitlity and a help window with restore instructions appears.

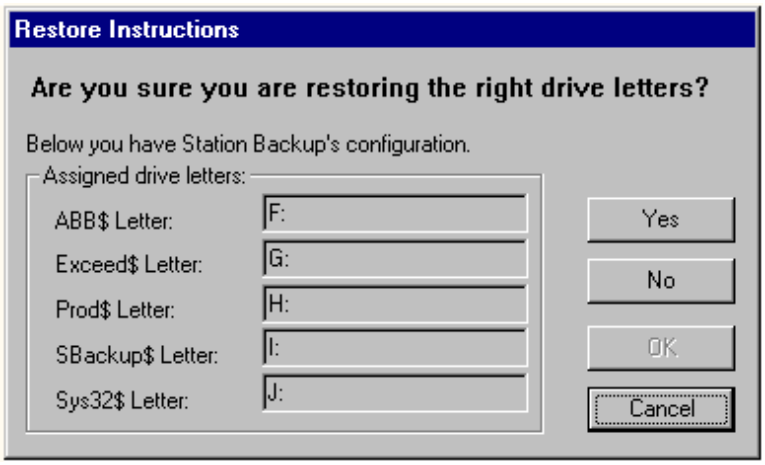


Figure 5-34. Restore Instructions dialog box

6. If you are not sure about how the drive letters are configured on the tape, click on the "No" button and follow the instructions in the next help window.

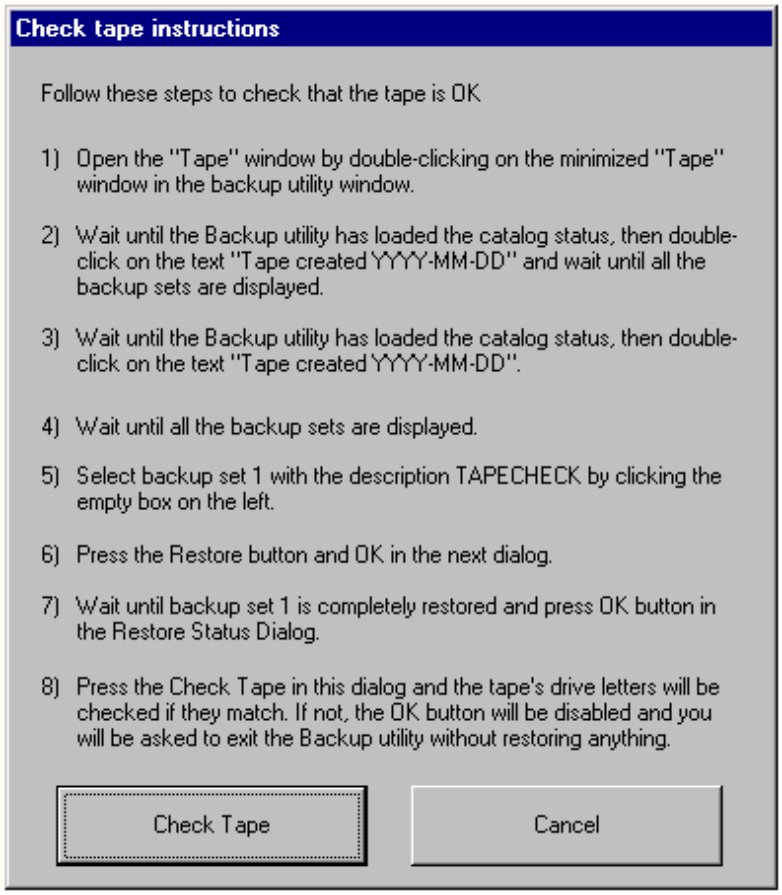

Check tape instructions
Follow these steps to check that the tape is OK
1) Open the "Tape" window by double-clicking on the minimized "Tape" window in the backup utility window.
2) Wait until the Backup utility has loaded the catalog status, then double-click on the text "Tape created YYYY-MM-DD" and wait until all the backup sets are displayed.
3) Wait until the Backup utility has loaded the catalog status, then double-click on the text "Tape created YYYY-MM-DD".
4) Wait until all the backup sets are displayed.
5) Select backup set 1 with the description TAPECHECK by clicking the empty box on the left.
6) Press the Restore button and OK in the next dialog.
7) Wait until backup set 1 is completely restored and press OK button in the Restore Status Dialog.
8) Press the Check Tape in this dialog and the tape's drive letters will be checked if they match. If not, the OK button will be disabled and you will be asked to exit the Backup utility without restoring anything.
Check Tape
Cancel

Figure 5-35. Check tape instructions dialog box

WARNING

It is very important that the Drive letter/Share configuration is consistent. The station that performs the remote restore must have the same Drive letter/Share configuration as the backup tape. If not, the backup restore will corrupt the file system.

7. When you are sure that the station that performs the remote restore have the same Drive letter/Share configuration as the backup tape, click on the "Yes" button in the help window with restore instructions.
8. Double-click on the minimized window "Tapes" in the lower left corner of the Backup utitlity window.

   The "Tapes" window expands in the Backup utitlity window.

9. In the "Tapes" window's left field double-click on the text "Tape created YYYY-MM-DD" and all backup sets on the tape are displayed in the window's right field.
10. Select all backup sets with either the description CONFIGURABLE or INDEPENDENT (depending on whether you want to make a configurable or an independent restore), by clicking in the corresponding backup sets' check boxes to the left in the "Tapes" window's right field.

    Always select all five of those backup sets that has the same description (either CONFIGURABLE or INDEPENDENT).
11. Click on the "Restore" button.
12. A dialog box showing the restore information for the first backup set appears over the Backup utitlity window.

    If a file on the backup tape already exist on the operator station, a confirmation box appears in which you are asked to confirm the file replacement.
13. Click on the "Yes to All" button on all those confirmation dialog boxes that appear during the restore.

    When all selected backup data have been restored into the disk, the Restore Status dialog box shows the message "The operation was successfully completed.".
14. Click on the "OK" button.
15. Quit the Backup utility by selecting Exit from the Operations menu or by clicking in the X button at the far right of the title bar.

    A number of scripts will be run to complete the restore operation. The restore operation is completed when all buttons and menus in the Station Backup main dialog are selectable again.
16. Click on the "Exit" button in the Station Backup main dialog.

In the Target station:

17. Click on the "Exit" button in the Station Backup main dialog.

Remote Interactive Restore

Example:

When you make a remote interactive restore and only want to copy the displays from the tape into the disk, do as follows:

In the Restore station:

1. Put in the restore tape in the restore station's tape drive.

   Wait until all actions are ready in the target station.
2. Press **F2** or click on the screen button D2 (Station Backup) in the Maintenance dialog.

NOTE

You can not select the Station Backup without full authorization (Max dialog).

The Station Backup main dialog appears.

3. Select or type the target station's name in the "Station to Backup" combo-box and click on the "Restore" button.

   The Select Restore Operation dialog box appears.

4. Click on the "Interactive" button.

   The Station Backup starts the Backup utitlity and a help window with restore instructions appears.

5. If you are not sure about how the drive letters are configured on the tape, click on the "No" button and follow the instructions in the next help window.

   WARNING

   It is very important that the Drive letter/Share configuration is consistent. The station that performs the remote restore must have the same Drive letter/Share configuration as the backup tape. If not, the backup restore will corrupt the file system.

6. When you are sure that the station that performs the remote restore have the same Drive letter/Share configuration as the backup tape, click on the "Yes" button in the help window with restore instructions.

7. Double-click on the minimized window "Tapes" in the lower left corner of the Backup utitlity window.

   The "Tapes" window expands in the Backup utitlity window.

8. In the "Tapes" window's left field double-click on the text "Tape created YYYY-MM-DD" and all backup sets on the tape are displayed in the window's right field.

9. Continue to click your way down in the tree structure in the "Tapes" window's left field until you have found the directory which contains the subdirectory with the displays.

10. Select the subdirectory by clicking in the check box to the left of the subdirectory in the "Tapes" window's right field.

11. Click on the "Restore" button in the backup utitlity window.

    A dialog box showing the restore information for the first backup set appears over the Backup utitlity window.

12. Click on the "OK" button to start the restore action of the backup set.

    The dialog box is closed. At the same time a dialog box showing the restore status appears over the Backup utitlity window.

    If a file on the backup tape already exist on the AdvaCommand station, a confirmation box appears in which you are asked to confirm the file replacement.

13. Click on the "Yes to All" button on all those confirmation dialog boxes that appear during the restore.

14. When all selected backup data have been restored into the disk, the Restore Status dialog box shows the message "The operation was successfully completed.".

15. Click on the "OK" button.
16. Quit the Backup utility and the Station Backup by selecting Exit from the Operations menu or by clicking in the X button at the far right of the title bar.
17. Click on the "Exit" button in the Station Backup main dialog.

5.1.3 RTA Board Configuration

Maintenance…D4 RTA Board Config.

You use this function to configure data on the RTA, for example EVENT TREAT for Event and Alarm handling.

1. Press **F4** or click on the screen button D4 (RTA Board Config.) and the following dialog box is presented:

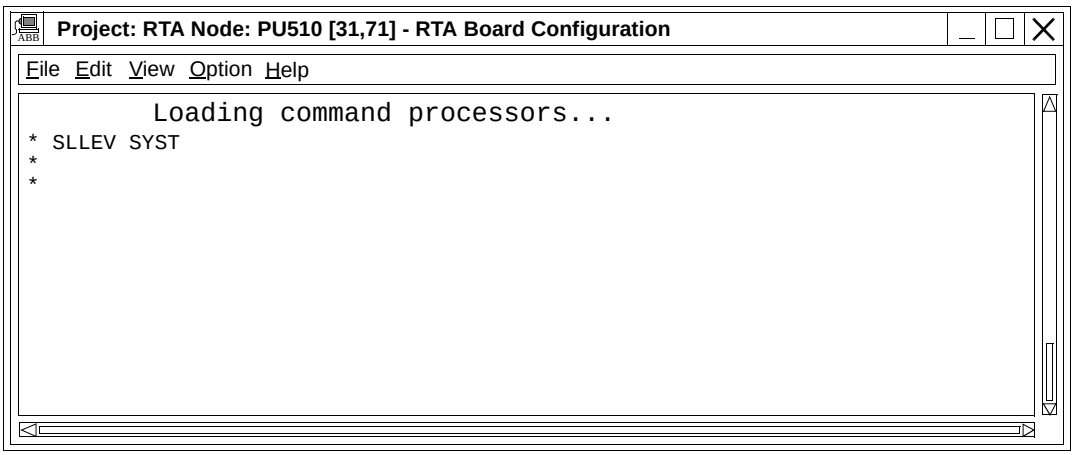


Figure 5-36. Example of RTA Board Configuration dialog box

A prompt, *****, is shown on the lowest line in the dialog box.

2. Enter: MDB (Modify Data Base) and the object you want to modify, for example **EVENT20**.

   The data base element appears on the screen and you can now perform suitable modifications.

The rest of the interaction is described in *AMPL Configuration Advant Controller 400 Series Reference Manual*.

If you have the AdvaBuild On-line Builder option installed, see also *AdvaBuild On-line Builder Engineering Stations User's Guide*.

5.1.4 Object Reference Maintenance

Maintenance…D6 Object References

To permit simple display design and other configuration in combination with fast addressing of the different objects of the process database, the PC Workstation automatically translates the object name into an object reference, which for example the display designer enters during dynamic configuration. This information is handled by and stored in the so called Name Broker.

Changes in the process database, with respect to the information stored in the Name Broker, which occur *after* the original commissioning, cannot however be detected by the system. An example of such a change is when an object is moved within the database and is assigned a new network, node, file number or record number. The translation (retranslation) of the object references must then be initiated manually.

You can request retranslation to objects in all nodes within your own network, to objects in a specified node, or to objects in all nodes connected to a specified network. The network can be either a control network or plant network. You can also check the reference for a specified object.

Information about resolved object references is automatically stored. This information can be used at a restart of the station.

All objects are located in nodes - process stations, operator stations, and IMS stations. The address of a node is a combination of a network number and a node number within the network. When you request a retranslation of references to objects in a network - own or a specified control/plant network - the references to objects in all nodes within the specified network are retranslated.

5.1.4.1 Object Reference Maintenance Activation

Press **F6** or click on the screen button D6 (Object References) and the Object Reference Maintenance dialog box (or main dialog box), Figure 5-37, is presented.

If an additional check for a user password is implemented in the configuration environment, a dialog box asking for password is presented. Enter the correct password and click the **OK** button.

See Section 3.2.1, Added Authority Level for more information about the additional authority check.

The Object Reference Maintenance main dialog box is now displayed (See Figure 5-37).

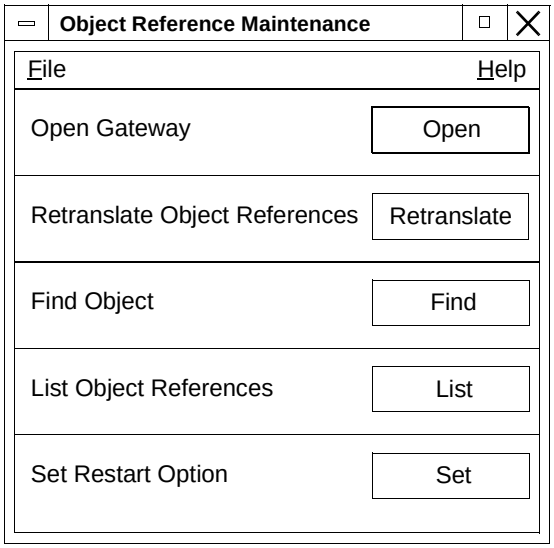


Figure 5-37. Object Reference Maintenance - Main dialog box

The Object Reference Maintenance dialog box provides the following functions (the names of the corresponding displays):

- **Open Gateway**

  Lets you open a gateway for a specified time. The purpose is, normally, to open for retranslation and find accesses, and to avoid automatic and implicit opening of gateways.

- **Retranslate Object References**

  Lets you retranslate all object references belonging to a specified range of nodes.

  If your own node is connected to a redundant network, you only need to specify one of the network numbers. The retranslation of object references for the redundant network is done automatically.

  The retranslation will be done for the available nodes - depending on which (if any) gateway you have opened.

- **Find Object**

  Lets you search for a specific object. The search is done within the available range of nodes (depends, for example, on which gateways that are currently opened).

  The feature also lets you make the found object a permanent object entry in the Name Broker, by setting the Permanent toggle button on prior to the search.

- **List Object References**

  Lets you define search conditions for the list. Once you have specified the search conditions and the search has ended with some result, the actual list dialog will appear.

- **Set Restart Option**

  Lets you define the restart behavior of the node concerning the usage of translated and stored object references. If you specify that the stored object references shall be used, no translation for those references will be done in the connected network. This means that all applications (History, User Objects and so on) will start up without name resolution.

As you select functions and display sub-dialogs from the Object Reference Maintenance dialog box, it will stay on screen. Several sub-dialogs can be active at the same time.

5.1.4.2 Menus

The Menu Bar is located in the upper portion of the Object Reference Maintenance dialog box and consists of pull-down menus. We have the pull-down menus File and Help.

File	Exit	Close the Object References Maintenance dialog box. Any open subdialogs will also be closed. If you have initiated some action, the result may not be saved. However, the action itself will not be stopped. In the case of started retranslations, these actions are not stopped since they run as background jobs which do not report to this dialog when completed. In the case of listing actions and so on, which report to this dialog when completed, they will not be interrupted by a dialog exit, but the result will be discarded.
Help	Help	Bring up the general Help dialog box, with topic "Main Dialog" active - the corresponding help text is presented. This dialog box is opened whenever Help is requested (exception: when help is requested in error dialogs, a diagnosis dialog may be presented instead). When the help window is requested from a help button, the correct topic is already selected. The header of the topic (the line shown in the topics list) is presented as the window title when the topic is selected. When the help dialog box is presenedt, you may select any of the topics (with double-click) in the bottom of the window.

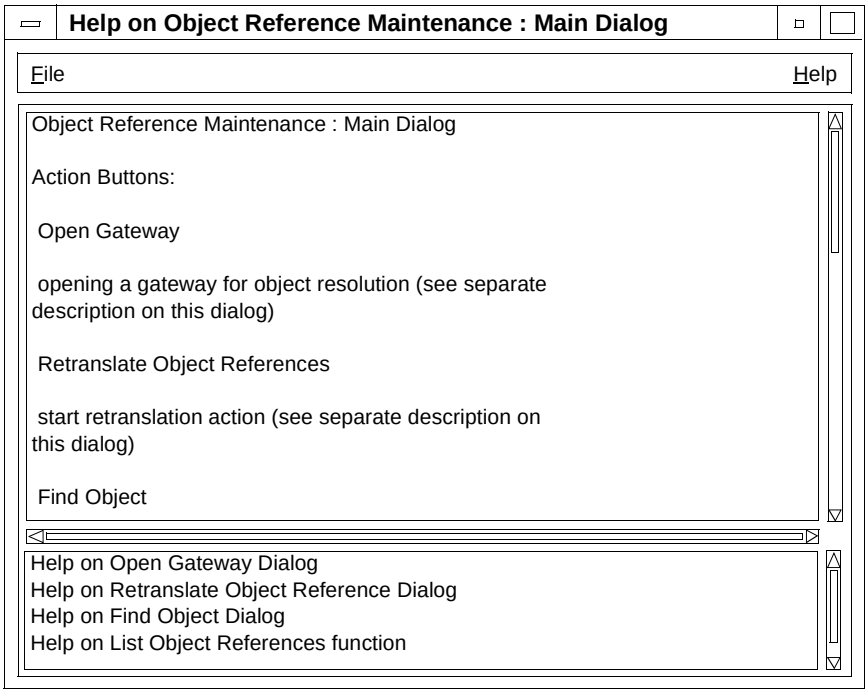

Help on Object Reference Maintenance : Main Dialog
File
Help
Object Reference Maintenance : Main Dialog
Action Buttons:
Open Gateway
opening a gateway for object resolution (see separate description on this dialog)
Retranslate Object References
start retranslation action (see separate description on this dialog)
Find Object
Help on Open Gateway Dialog
Help on Retranslate Object Reference Dialog
Help on Find Object Dialog
Help on List Object References function

Figure 5-38. Help on Object Reference Maintenance dialog box

The Help menu in the Help dialog box has a number of items in the menu bar:

- File - Close:

Will close the help dialog

- File - Keep text:

Will keep the current text in the help dialog window. If a new topic is selected (by double clicking in the topics list) a new help information box is displayed.

A small toggle button is shown "pushed-in" for the Keep text function in the File menu. To turn off the Keep text option - select it again in the menu.

5.1.4.3 Push buttons

All five functions in the Object Reference Maintenance dialog box have a button:

Open	Open Gateway If no gateway is connected to the current network, the Open button is dimmed, and the Open Gateway dialog is not available.
Retranslate	Retranslate Object References
Find	Find Object
List	List Object References
Set	Set Restart Option

All functions are described in greater detail in the following sections.

5.1.4.4 Open Gateway

When you click on **Open** in the main dialog box, the Open Gateway dialog box appears.

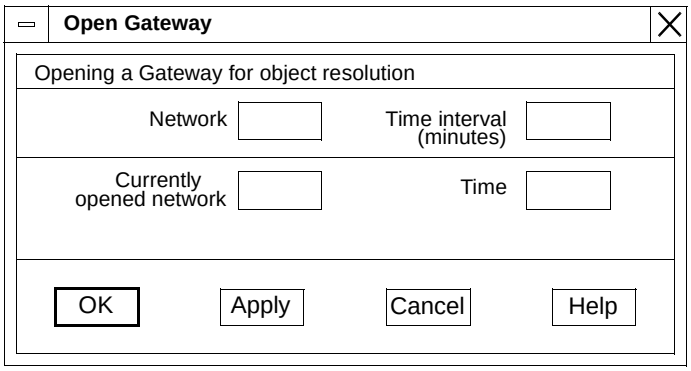


Figure 5-39. Open Gateway dialog box

This dialog box lets you open a gateway for a specified time. The purpose is to open for retranslation and find activities, and to avoid automatic and implicit opening of gateways.

Text boxes

Network	The network number to which the gateway shall be opened. The following rules apply for network numbers: - The range of valid values is 11 to 127 - Wildcards are not allowed - Number must not start with '0' - Numbers ending with '0' are not allowed (denote more than one network). - An empty string is not allowed
Time interval	The number of minutes for which the gateway shall be kept open. The following rules apply for Time: - Range: 1 - 126 minutes. - An empty string is not allowed
Currently opened network *(for presentation only)*	When the dialog is presented, the number of an, eventually, previously opened network gateway is shown in this field. If a new network is specified for opening (in the Network field), this previously opened gateway is automatically closed. If no gateway is currently open, this text field, including the label, is dimmed. If the network is a plant network, the network number will be set to 100.
Time *(for presentation only)*	The total open time for the gateway. If no gateway is currently open, this text field and label will be dimmed.

Push buttons

OK	When you click on OK the currently entered data (in the Network and Time interval fields) is checked and, if no error is detected, the data is stored. If data is accepted the opening will be performed, and the Open Gateway dialog box is closed. The only visible feedback from this operation is that the Network figure is displayed in the Currently opened network text field the next time the dialog is requested. If entered data is not valid, the Input Error message box is displayed,.

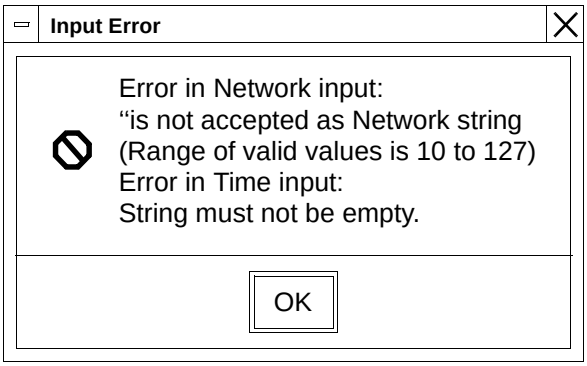

Input Error
Error in Network input:
"is not accepted as Network string
(Range of valid values is 10 to 127)
Error in Time input:
String must not be empty.
OK

Figure 5-40. Input Error information box

OK - The Input Error information box indicates why the input was not accepted, and also which parameter (Network or Time) caused the error.

Click on OK to close the dialog box.

Apply	Input is checked and so on, according to the action for OK, but the Open Gateway dialog will remain presented (and dimmed during the open gateway call).
Cancel	Open Gateway Dialog is closed (no open action is performed).
Help	The general Help dialog is presented, with the topic "Open Gateway" active - the corresponding help text is presented.

5.1.4.5 Retranslate Object References

When you click on the **Retranslate** button in the main dialog box, the following dialog box appears.

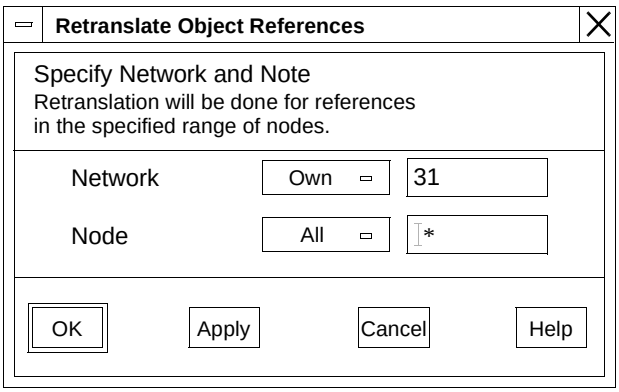


Figure 5-41. Retranslate Object References dialog box

This dialog lets you do retranslation for all object references to a range of nodes, specified by the Network and Node inputs.

If your own node is connected to a redundant network, you only have to give one of the network numbers. Retranslation for object references translated for the redundant network is done automatically.

The retranslation will then be done in the range of available nodes - depending on which (if any) gateway you have opened.

Input text boxes

Network

If you click on the menu next to the text box you will get the following options:

- **Own** (=current network), inserts your own network in the text box and makes in unavailable.
- **Specified**, makes the text box editable.

The following rules apply for network numbers:

- The range of valid values is 11 to 127, where any numeric character may be replaced with the wildcard character ('*').
- Number must not start with '0'.
- Numbers ending with '0' are not allowed (denote more than one network).
- An empty string is not allowed.

Node

If you click on the pop-up menu next to the text field you will get the following options:

- **All**, clears the text box and makes it unavailable.
- **Specified**, makes the text box editable.

The following rules apply for node numbers:

- The range of valid values is "1" to "99" and "127", where any of the numeric characters may be replaced with the '*' character.
- Numeric string must not begin with '0'.
- An empty string is not allowed.

Push buttons

OK

If the entered data is accepted (valid) a confirmation dialog box is displayed. If entered data is not accepted the Input Error information box is displayed. See the previous description under Open Gateway.

A confirmation dialog box is displayed to let you verify the activation of the retranslation process.

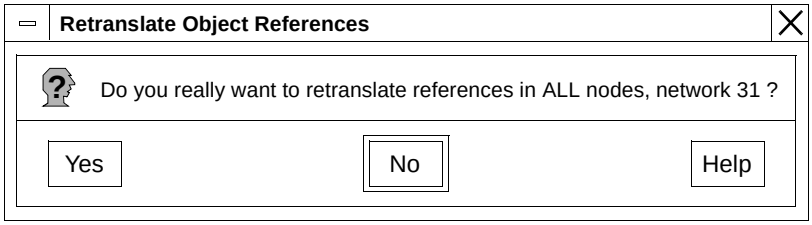


Figure 5-42. Retranslate Object References confirmation dialog box

Yes	Activates the translation and closes the confirm dialog as well as the Retranslate Object References dialog.
No	No action is performed, dialog is closed.
Help	Presents the general help dialog, with the topic "Retranslate Object References" active.

5.1.4.6 Find Object

When you click on the **Find** button in the main dialog box, the Find Object dialog box appears.

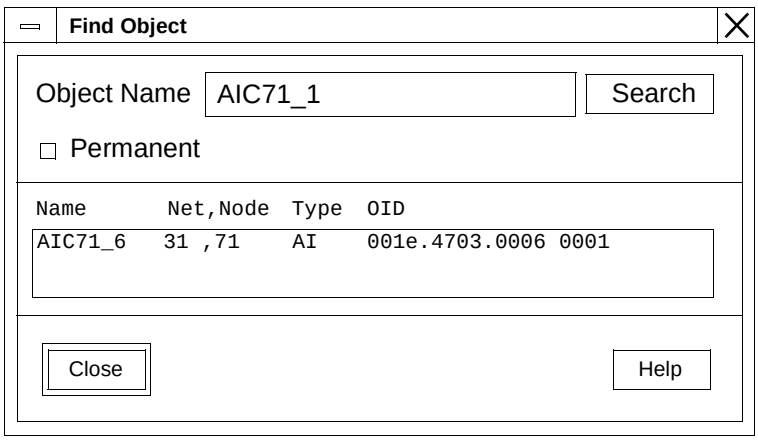


Figure 5-43. Find Object dialog box

This dialog box lets you search for a specific object. The search is done within the available range of nodes (means that the outcome depends on which gateways are currently open).

The dialog box also lets you make the found object a permanent object entry in the Name Broker, by checking the Permanent toggle button prior to the search.

Text box for input

Object Name

Name of the object to be searched for.

The following rules apply for object names:

- Valid characters are: '0' to '9', 'a' to 'z', 'A' to 'Z', '-', '_', ',', and '.'
- In addition to the above characters, the set of "national" characters is also available (for example å, ä and ö).
- Wildcards ('*') are not allowed
- Blank names are not allowed.

If you type the object name with lowercase letters, they will automatically be changed to uppercase.

Text box for output

A list window with internal presentation of the resolved object's name, adress and type description.

Push buttons

Search

When you click on Search and the entered object name is valid, a search is started. An invalid input will cause the Input Error information box to appear.

If any object is found, the object information is presented in the list below the Permanent button.

If no object is found, the Find Object information box is displayed with the message: "Object not found".



Figure 5-44. Input error information box

Click on OK to close the box, or on Help to get help information.

Permanent	Toggle values: • **unchecked**: the object (if found) will be a transient object entry only, and immediately removed from the Name Broker. • **checked**: the object (if found) will become a permanent object entry in the Name Broker.
Close	Closes the Find Object dialog box.
Help	The general help is displayed, and the topic "Find Object" is active, the corresponding help text is displayed.

5.1.4.7 List Object References

When you click on the **List** button in the main dialog box, the Define Search Conditions dialog box appears.

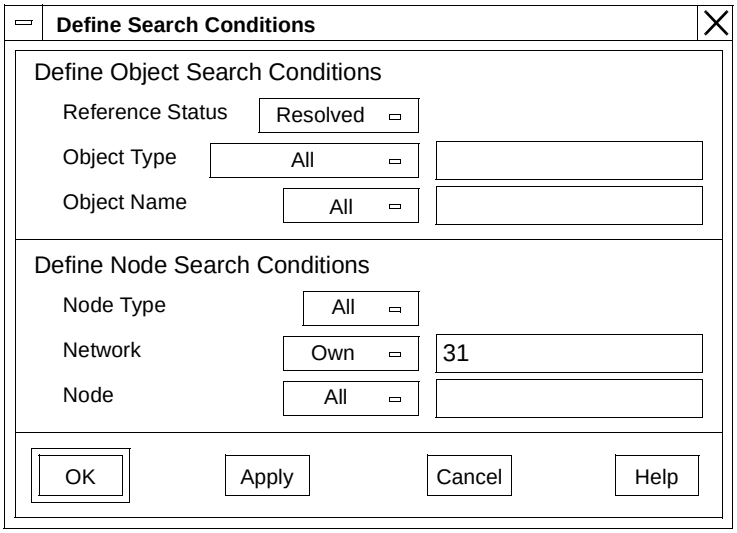


Figure 5-45. Define Search Conditions dialog box

This dialog box lets you define search conditions for the list. Once the search conditions have been entered, and the search has ended with some result, the actual list dialog is displayed.

Pop-up menus and text boxes

Reference Status

Status of the object reference in the Name Broker. There are two alternatives you can select from the menu:

- **Resolved** (default)
- **Unresolved**, causes all other options to be dimmed.

Object Type

There are three alternatives you can select from the menu:

- **All** (default)
- **Specified**, enter object type value in the text box (wildcards not allowed).
- **Select from List**, displays a sub-dialog containing a list of object types you can select from.

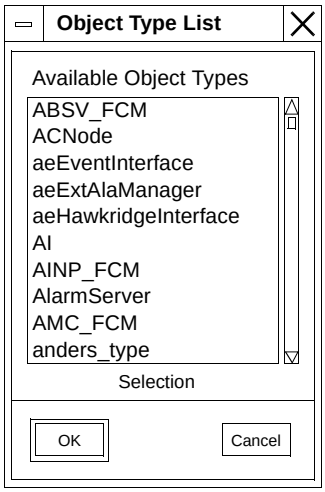


Figure 5-46. Object Type List dialog box

OK - the selected value is inserted in the Object Type text field of the Define Search Conditions dialog. Also the option case is changed from "Select from List" to "Specified".

Cancel - closes the Object Type List Dialog box and inserts no object type into the text field.

Object Name

There are two options in the menu:

- **All**, default value
- **Specified**, type an object name in the text field. Wildcard characters, '?' (= any single character) and '*' (=any sequence of characters) are allowed.

Node Type

There are three alternatives in the menu:

- **All** (default)
- **Master**, means MasterPiece, MasterView, SuperView 100, SuperView 900 and Advant Controller (AC)
- **Advant**, means the Advant Station 500 Series Operator Station (AdvaCommand), Information Management Station (AdvaInform) and Engineering Station (AdvaBuild).

Network

There are two alternatives in the menu:

- **Specified**, enter a network number into the text field.
- **Own**, local.

The following rules apply for network numbers:

- The range of valid values is 11 to 127, where any of the characters may be replaced with the wildcard ('*') character
- Number must not start with '0'
- Numbers ending with '0' are not allowed (denote more than one network).
- An empty string is not allowed

Node

There are three alternatives in the menu:

- **All** (default)
- **Specified**, enter node address number in the text field.
- **Own**, local.

The following rules apply for node numbers:

- The range of valid values is 1 to 99 and 127, where any of the numeric characters may be replaced with the wildcard ('*') character
- Numeric string must not begin with '0'
- An empty string is not allowed.

Push buttons

OK

If input is valid, then start the list search, and close the Define Search Conditions dialog.

If input is not valid, an Input Error Dialog appears that explains which parameter was not accepted, and why. The Defined Search Conditions dialog will remain to enable new input values to be entered.

When the search starts, the Reference List dialog box is displayed (dimmed and empty) and the cursor becomes watch shaped.

When the search is completed, the watch cursor returns to its normal shape, and the resulting list of references is presented in the Reference List dialog box. If the search failed - that is, no references matched the defined search conditions - an error information box is displayed.

Apply	If input is valid, start the list search, and continue to display the Define Search Conditions dialog box. Otherwise, see OK above.
Cancel	Close the Define Search Conditions dialog box.
Help	The general help dialog is displayed with the "Define Search Conditions" topic active.

Reference List

When you activate the list search by pressing **OK** or **Apply** in the Define Search Conditions dialog box and the search concludes with some result, the following dialog box appears.

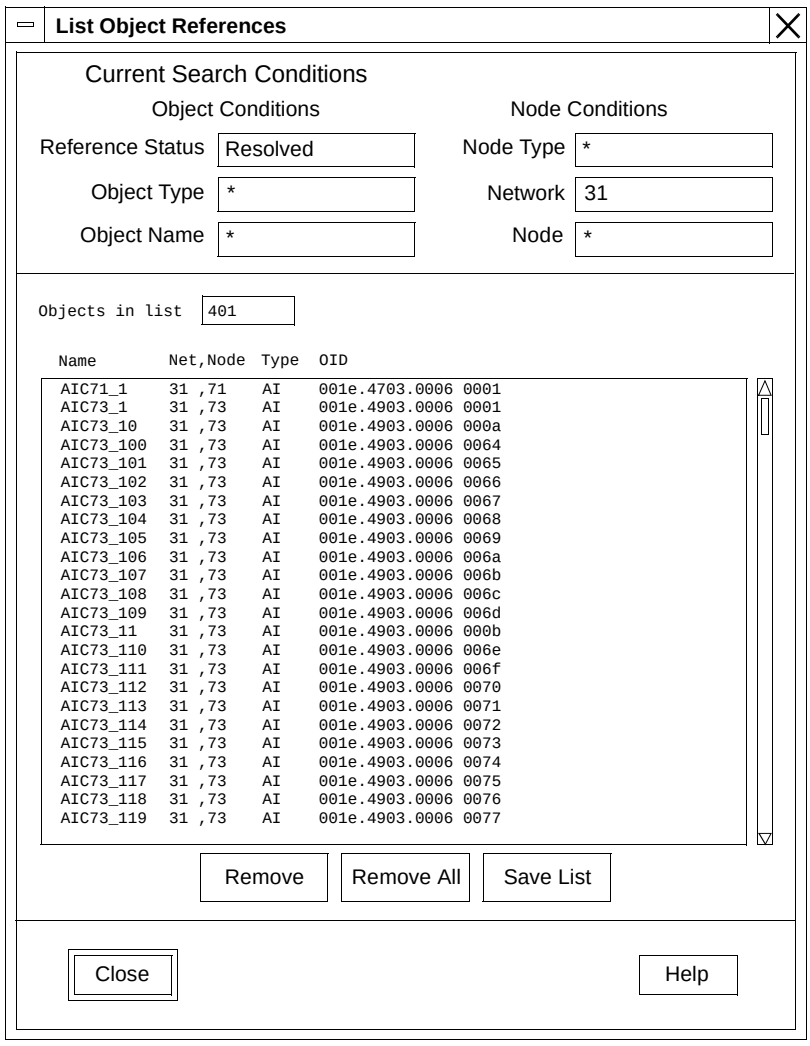


Figure 5-47. List Object References dialog box

The dialog box has two presentation parts:

- Current Search Conditions (top of box)
- List of references - This is the result from the previous search.

Push buttons

Remove	Removes the references from the Name Broker. A confirm dialog appears when the **Remove** button is pressed.

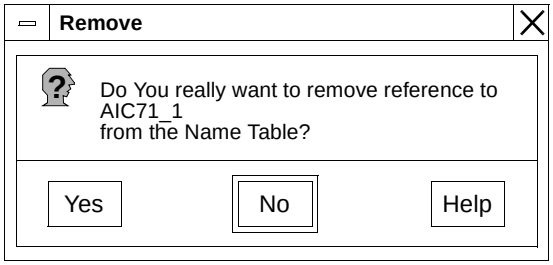


Figure 5-48. Remove confirmation dialog box

This action is only available when one or more removable references are selected in the list.

NOTE

If a reference which is not allowed for removal is selected within a multiple selection, the remove action will not have any effect on this reference.

When a reference has been removed, it is marked in the Reference List Dialog with a "v-" in front of the object name.

Remove All

Removes all listed references from the Name Broker. A confirm dialog appears when the **Remove All** button is pressed.

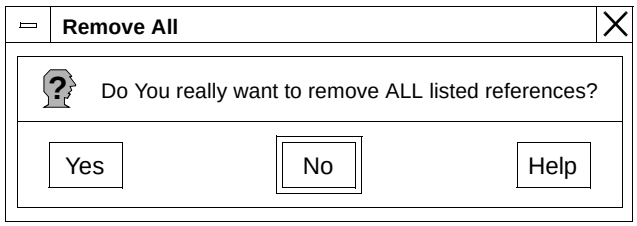


Figure 5-49. Remove All confirmation dialog box

Removed references are marked in the Reference List Dialog with a "v-" in front of the object name. The Remove All action causes all references to be marked - except for those that were not allowed to be removed.

Save List

Saves the current list on the file /tmp/References.tmp. The same file name is always used, and previous versions of this file will be overwritten, so when you click on the **Save List** button the Save List dialog with a warning appears.

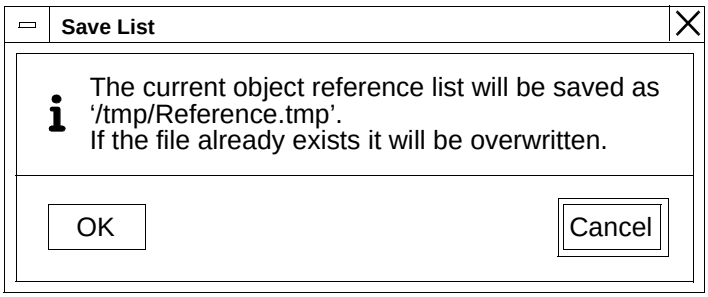

Save List
The current object reference list will be saved as '/tmp/Reference.tmp'.
If the file already exists it will be overwritten.
OK
Cancel

Figure 5-50. Save List warning dialog box

The Save List warning dialog has the following buttons:

OK - saves the list to the specified file and the warning dialog is closed.

Cancel - no save is done and the warning dialog is closed.

Help

Displays the general help dialog, with topic "List Object References" active and the corresponding help text presented.

Close

Closes the Reference List dialog.

5.1.4.8 Set Restart Option

When you click on the **Set** button in the main dialog box, the following dialog box appears.

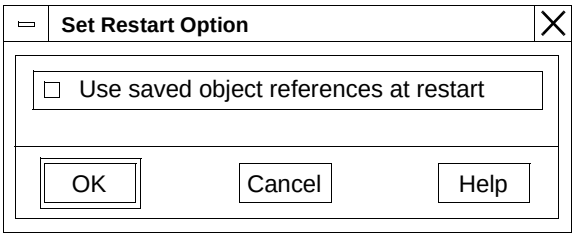


Figure 5-51. Set Restart Option dialog box

This dialog box lets you define the restart behavior of the node concerning the usage of translated and stored object references. If you specify the stored object references to be used, no translations for those references will be done in the connected network. This means that all applications will start up without name resolution.

NOTE

Since name resolution will start up as a background job if objects are not resolved, it may take some time until all symbols have been resolved. For that reason, the default setting is to use saved object references at restart.

When this dialog box is displayed, the toggle button shows the current value of this option.

Push buttons

OK	The dialog is closed, and a call is made to set the restart option according to the entered value on the toggle button.
Cancel	The dialog is closed, any change in the option is discarded.
Help	The general help dialog is displayed, with the topic "Set Restart Option" active: the corresponding help text presented.

5.1.5 Node Broker

Maintenance…D7 Node Broker

Only installed with RTA for Master.

The Node Broker is a configuration tool used to specify which nodes, outside your own control network, your Windows NT station shall be allowed to access. The Node Broker configuration is required to allow access towards nodes (for example subscription) across gateway boundaries. The Node Broker must be used for this purpose whether your station is connected to a control network, or to the plant network. In both cases the configuration is done in exactly the same way.

Nodes can be added to or removed from a list of node entries. They can be connected or disconnected manually. Note that nodes in the control network can be added but the status of their node entries can not be manipulated. Optionally, a node description can be added for each node entry.

Node entries are added with status "Down". Initially each node must be connected manually. In this case the status will be changed to "Up". No check is done to verify if the node is accessible or not.

For nodes marked as *Up*, the actual communication status will be handled by applications in the same way as within the local control network. This means that data to your applications will not be available when the subscribed node goes down and will be re-subscribed when the node is restarted. This change is reflected in the status indication for node entries in the Node Broker.

If one of the gateways goes down, all nodes connected to the corresponding control network are reported as disconnected. This change is not reflected in the status indication for the node entries in the Node Broker. All nodes marked with Up will be connected automatically after restart of the gateway. No other node entries will be affected.

Node Broker information will be saved permanently and will be used at restart. Nodes indicated as Up, will be automatically connected at restart of your station.

5.1.5.1 Tutorial

The following example shows how to add and remove nodes, and change their status. This example also explains different situations which may occur.

To add a node (for example, node 4 in network 41), first choose the corresponding control network (Network decade). In this case it is 4. The network column will now allow you to choose between network number "41 ---49". Click on "41" and select node number "4" in the Node column. The selected network and node number will be echoed in the fields below the corresponding column. Type the node description, for example IMS 1 nw 4, and press the Add key which is available after selection of both network and node number. The defined node will now be added to the list of node entries in the presentation part with status marked as "Down".

The first time after configuration, the node has to be connected manually. Select node entry for "41,4" and press <Connect>. The status indication will change from "Down" to "Up".

To verify the availability, you can do an access to an object using one of the Object Presentation Displays, for example, for AI. If you "Disconnect" the node entry a selection will not be possible.

NOTE

The gateway must allow selection. If the gateway does not allow selection, you have to build a display to verify the functions.

5.1.5.2 Dialog boxes and Menus

Press **F7** or click on the screen button D7 (Node Broker) and the Node Broker Configuration dialog box appears.

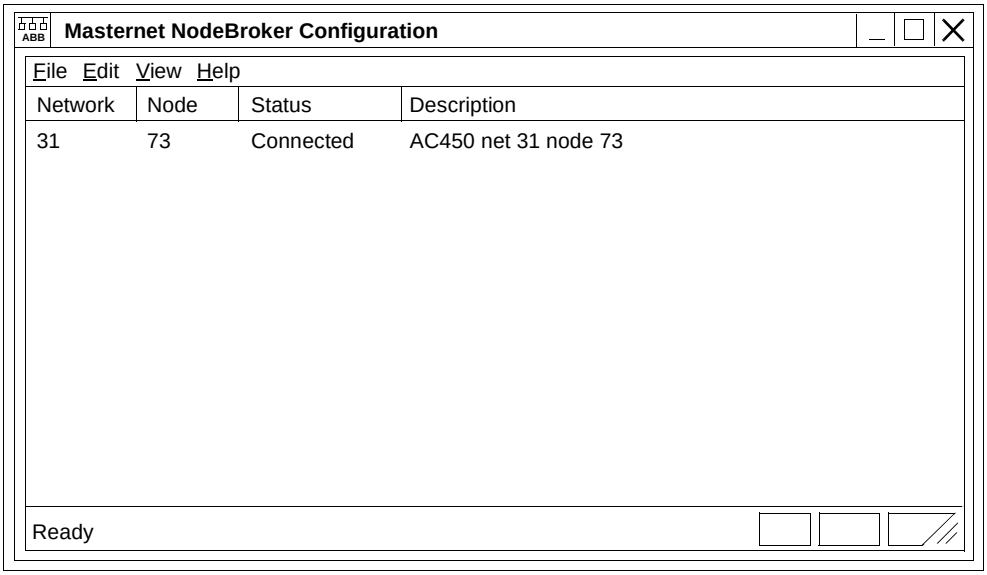


Figure 5-52. Node Broker dialog box

You can add nodes outside the local control network which you want to access. A node description can be provided optionally.

The display shows list of nodes with their corresponding network and node number, status and description. For the node entries in this list you can choose the following actions:

- Remove
- Connect
- Disconnect

These actions are only available if an entry is selected. Only one selection is possible at a time. The Connect and Disconnect actions are dependent on the actual status. Connect is available when status is Down. Disconnect is available when status is Up.

No help is available yet.

The File menu contains the action "Exit".

File	Print...	Print list of Nodes configuration
	Print Preview	Preview before print
	Print Setup...	Printer configuration
	Exit	Exit the window
Edit	Add Node	Add node outside control network
	Modify Node	Modify node configuration
	Connect Node	Connect node outside control network
	Disconnect Node	Disconnect node outside control network
	Delete Node	Delete node from list
View	Status Bar	Toggles the Status Bar
Help	Contents	Show on-line help contents
	About	Displays a dialog box with the version number and a copy-right notice

5.2 Hardware Indicators

Please refer to the *AdvaCommand for Windows NT Hardware Reference Manual* for information about hardware indicators.

5.3 Error Messages

Software error messages are presented as follows:

- Information relating to current activity appears on the message line in the dialog area. The message is displayed in pale yellow.
- Dialog boxes or information windows in system applications appear describing the error that has occurred.

5.4 Fault Finding and User Repair

Maintenance…D5 View Diagnostic Log

A tool for logging and finding software errors and hardware errors found by the operator station software is available. It is a Diagnostic Log that you can activate when an error is suspected and deactivate when the suspected error is logged.

To activate the Diagnostic Log, do as follows:

1. Select the subitem **System Config** from the item System Display Keys in the pop-up menu Operation. If you have full authorization (max dialog, the following set of dynamic function keys is displayed:

D1 AdvaCommand…	D2 AdvaBuild…	D3	D4	D5
D6 Settings…	D7 Station…	D8 Maintenance…	D9	D10

Figure 5-53. Dynamic function keys - Max dialog

2. Press **F6** or click on the screen button D6 (Settings...). The following set of dynamic function keys is now presented:

D1 Date and Time	D2 Station Settings	D3 Printer Config.	D4 Hardcopy Config.	D5
D6	D7	D8	D9	D10

Figure 5-54. Dynamic function keys - Max dialog - D6 Settings…

3. Press **F2** or click on the screen button D2 (Station Settings) and a dialog box is displayed where you can switch *on* the System Diagnostic Log.

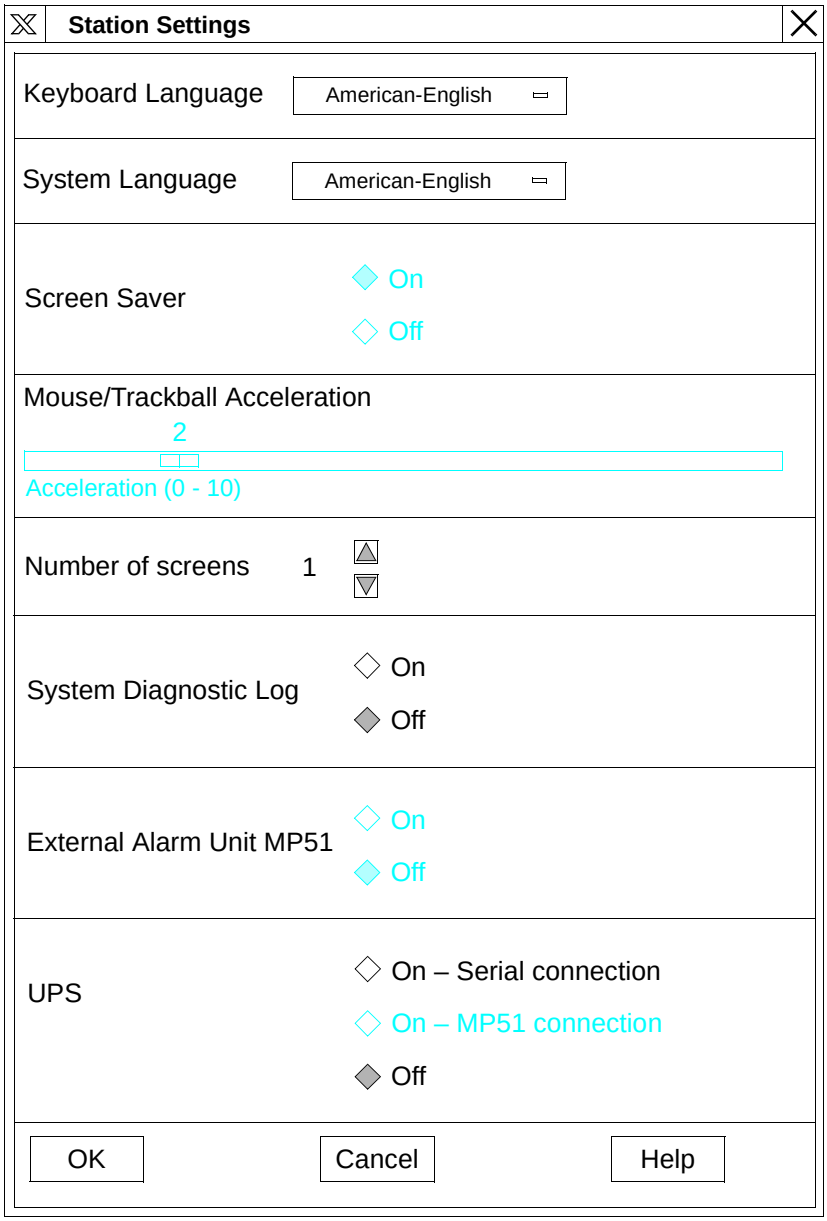


Figure 5-55. Dialog box for station settings

After the log is switched *on*, you must perform a Function Restart to activate the logging.

The found errors are now logged on a disk file. The logged information is displayed if you press **F8** or click on the screen button D8 (Maintenance...) in the configuration dialog and then press **F5** or click on the screen button D5 (View Diagnostic Log). The 70 latest found errors are presented in a window. Select a suitable printer and request a printout of the log. Send this printout to ABB for analysis.

Once the suspected error is logged and the list is printed out, switch *off* the logging in the same way you switched it *on*, and perform a new Function Restart to stop the logging. Press **F7** or click on the screen button D7 (Station...) in the Configuration dialog and then **F1** or click on the screen button D1 (Function Restart).

The diagnostic log should be switched *on* **only** when you are searching for a suspected error. Since the created log file can occupy a great deal of disk space, it should not be *on* when it is not needed.

The dynamic function key **F5** or click on the screen button D5 (View Diagnostic Log) is presented only when logging is set to *on*.

Maintenance…D8 Log Database Config

The Log Database Configuration is described in section 3.3.17 Trend System Configuration.

Appendix A Event Texts

A.1 General

The events defined for the various signal/object types are described in the tables below with the following layout:

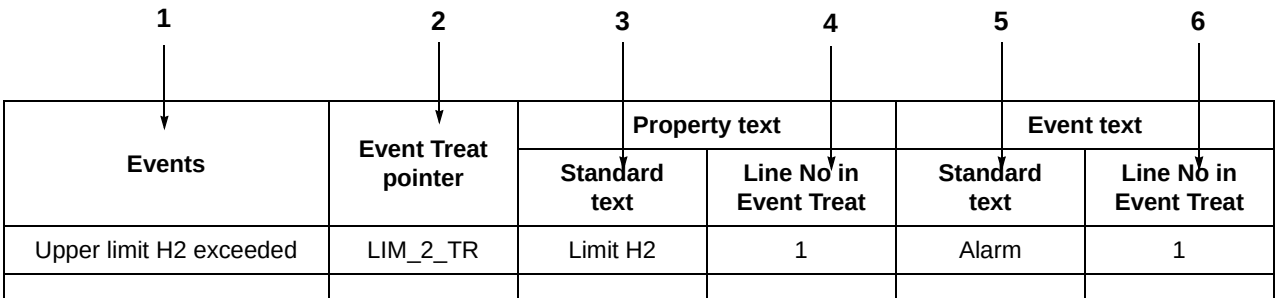


Figure A-1. Event Text Table Layout

1. Description of the event.
2. Pointer to data base elements in Event Treat. All pointers for each signal/object type and the recommended values for standard event handling are described in the manuals *Functional Units, Part 1* to *Functional Units, Part 7*.
3. Standard property text that describes the event (applies to EVENT1-EVENT18). EVENT20- EVENT300 have user-defined texts.
4. Line number in the EVENT data base elements where your own text should be placed (applies to EVENT20- EVENT300).
5. Standard event text that describes the state of the event, alarm-normal, blocked-deblocked, etc. If EVENT20-EVENT300 are chosen, you can define the appropriate text yourself.
6. Line number in the EVENT data base elements where your own text should be placed (applies to EVENT20- EVENT300). The line number is the same for standard event texts (applies to EVENT1- EVENT18).

A.2 Analog Input Signal AI

Table A–1. Event Texts for AI

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Upper limit H2 exceeded	LIM_2_TR	Limit H2	1	Alarm	1
Upper limit H2 re-entered	LIM_2_TR	Limit H2	1	Normal	3
Upper limit H1 exceeded	LIM_1_TR	Limit H1	1	Alarm	1
Upper limit H1 re-entered	LIM_1_TR	Limit H1	1	Normal	3
Lower limit L1 exceeded	LIM_1_TR	Limit L1	2	Alarm	2
Lower limit L1 re-entered	LIM_1_TR	Limit L1	2	Normal	4
Lower limit L2 exceeded	LIM_2_TR	Limit L2	2	Alarm	2
Lower limit L2 re-entered	LIM_2_TR	Limit L2	2	Normal	4
Measured value entered	LIM_1_TR	Value	4	ValueChg	8
H2-value entered	LIM_2_TR	Limit H2	1	ValueChg	5
H1-value entered	LIM_1_TR	Limit H1	1	ValueChg	6
L1-value entered	LIM_1_TR	Limit L1	2	ValueChg	7
L2-value entered	LIM_2_TR	Limit L2	2	ValueChg	6
Signal error On	ERR_TR	Sig.Err	1	Alarm	1
Signal error Off	ERR_TR	Sig.Err	1	Normal	2
Blocking of event handling	ERR_TR	Alarm	2	Blocked	3
Deblocking of event handling	ERR_TR	Alarm	2	Deblocked	4
Blocking of printout	ERR_TR	Printout	3	Blocked	3
Deblocking of printout	ERR_TR	Printout	3	Deblocked	4
Blocking of DB-update	ERR_TR	Update	4	Blocked	3
Deblocking of DB-update	ERR_TR	Update	4	Deblocked	4

A.3 Analog Output Signal AO

Table A–2. Event Texts for AO

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Manual control mode	ERR_TR	Manual	3	On	5
Auto control mode	ERR_TR	Auto	3	On	4
Block output signal against process	ERR_TR	Output sign	6	Blocked	6
Deblock output signal against process	ERR_TR	Output sign	6	Deblocked	7
Measured value entered	ERR_TR	Output sign	2	ValueChg	3
Max limit value entered	ERR_TR	Max limit	7	ValueChg	3
Min limit value entered	ERR_TR	Min limit	8	ValueChg	3

A.4 Digital Input Signal DI

Table A–3. Event Texts for DI

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Abnormal position On	VALUE_TR	Value	1	Alarm	1
Normal position On	VALUE_TR	Value	1	Normal	2
Abnormal value entered	VALUE_TR	Value	3	ValueChg	5
Normal value entered	VALUE_TR	Value	3	ValueChg	6
Signal error On	ERR_TR	Sig.Err	1	Alarm	1
Signal error Off	ERR_TR	Sig.Err	1	Normal	2
Blocking of event handling	ERR_TR	Alarm	2	Blocked	3
Deblocking of event handling	ERR_TR	Alarm	2	Deblocked	4
Blocking of printout	ERR_TR	Printout	3	Blocked	3
Deblocking of printout	ERR_TR	Printout	3	Deblocked	4
Blocking of data base update	ERR_TR	Update	4	Blocked	3
Deblocking of data base update	ERR_TR	Update	4	Deblocked	4

A.5 Digital Output Signal DO

Table A–4. Event Texts for DO

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Order On	ERR_TR	Output sign	2	On	3
Order Off	ERR_TR	Output sign	2	Off	4
Manual control mode	ERR_TR	Manual	3	On	6
Auto control mode	ERR_TR	Auto	3	Off	5
Blocking of output signal against process	ERR_TR	Output sign	6	Blocked	7
Deblocking of output signal against process	ERR_TR	Output sign	6	Deblocked	8

A.6 Sequence SEQ

Table A–5. Event Texts for SEQ

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Change the step	POS_TREAT	StepChg	1	ValueChg	1
Step number for jump entered	POS_TREAT	Jump mode	2	Enter	2
Number of turns entered	POS_TREAT	Turn no	3	Enter	2
Interval time entered	POS_TREAT	IntervT	4	Enter	2
Indication Active On	IND_TREAT	Active	1	On	1
Indication Active Off	IND_TREAT	Active	1	Off	2
Indication Last Step On	IND_TREAT	Last Step	2	On	3
Indication Last Step Off	IND_TREAT	Last Step	2	Off	4
Indication Auto control mode On	IND_TREAT	Auto Ind	3	On	5
Indication Manual control mode On	IND_TREAT	Man Ind	4	On	5
Indication step Hold On	IND_TREAT	Hold Ind	5	On	5

Table A–5. Event Texts for SEQ (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	**Line No in Event Treat**	**Standard text**	**Line No in Event Treat**
Indication Unconditional control mode On	IND_TREAT	Uncond Ind	6	On	5
Indication Next step On	IND_TREAT	Next	7	On	5
Position error On	FAULT_TR	Jump error	1	Alarm	1
Position error Off	FAULT_TR	Jump error	1	Normal	2
Sequence error On	FAULT_TR	SeqAlarm	3	Alarm	1
Sequence error Off	FAULT_TR	SeqAlarm	3	Normal	2
Step error On	FAULT_TR	StepAlarm	4	Alarm	1
Step error Off	FAULT_TR	StepAlarm	4	Normal	2
Blocking of event handling for position change	FAULT_TR	PosAlarm	7	Blocked	3
Deblocking of event handling for position change	FAULT_TR	PosAlarm	7	Deblocked	4
Blocking of printout for position change	FAULT_TR	PosPrint	11	Blocked	3
Deblocking of printout for position change	FAULT_TR	PosPrint	11	Deblocked	4
Blocking of event handling for disturbance	FAULT_TR	Disturb	5	Blocked	3
Deblocking of event handling for disturbance	FAULT_TR	Disturb	5	Deblocked	4
Blocking of printout for disturbance	FAULT_TR	DistPrint	9	Blocked	3
Deblocking of printout for disturbance	FAULT_TR	DistPrint	9	Deblocked	4
Blocking of event handling for type error	FAULT_TR	TEAlarm	6	Blocked	3
Deblocking of event handling for type error	FAULT_TR	TEAlarm	6	Deblocked	4
Blocking of printout for type error	FAULT_TR	TEPrint	10	Blocked	3
Deblocking of printout for type error	FAULT_TR	TEPrint	10	Deblocked	4

Table A–5. Event Texts for SEQ (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Blocking of event handling for ind. changes	FAULT_TR	IndAlarm	8	Blocked	3
Deblocking of event handling for ind. changes	FAULT_TR	IndAlarm	8	Deblocked	4
Blocking of printout for ind. changes	FAULT_TR	IndPrint	12	Blocked	3
Deblocking of printout for ind. changes	FAULT_TR	IndPrint	12	Deblocked	4
Blocking of operator order	FAULT_TR	OprOrder	13	Blocked	3
Deblocking of operator order	FAULT_TR	OprOrder	13	Deblocked	4

A.7 Process Controller PIDCON

Table A–6. Event Texts for PIDCON

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Lower limit L1 for measured value exceeded	H1L1_TR	MV<L1	1	<Value> <Unit>	1
Lower limit L1 for measured value re-entered	H1L1_TR	MV<L1	1	<Value> <Unit>	2
Upper limit H1 for measured value exceeded	H1L1_TR	MV>H1	2	<Value> <Unit>	1
Upper limit H1 for measured value re-entered	H1L1_TR	MV>H1	2	<Value> <Unit>	2
Lower limit (1) for deviation exceeded	H1L1_TR	DEV<L	3	<Value> <Unit>	1
Lower limit (1) for deviation re-entered	H1L1_TR	DEV<L	3	<Value> <Unit>	2
Upper limit (1) for deviation exceeded	H1L1_TR	DEV>H	4	<Value> <Unit>	1
Upper limit (1) for deviation re-entered	H1L1_TR	DEV>H	4	<Value> <Unit>	2

Table A–6. Event Texts for PIDCON (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Lower limit L2 for measured value exceeded	H2L2_TR	MV<L2	1	<Value> <Unit>	1
Lower limit L2 for measured value re-entered	H2L2_TR	MV<L2	1	<Value> <Unit>	2
Upper limit H2 for measured value exceeded	H2L2_TR	MV>H2	2	<Value> <Unit>	1
Upper limit H2 for measured value re-entered	H2L2_TR	MV>H2	2	<Value> <Unit>	2
PC-gate LOCALFL decides control mode	MODE_TR	LOCAL !!	1	On	1
PC-gate MANFL decides control mode	MODE_TR	MAN !!	2	On	1
PC-gate AUTOFL decides control mode	MODE_TR	AUTO !!	3	On	1
PC-gate E1 decides control mode	MODE_TR	E1 !!	4	On	1
PC-gate E2 decides control mode	MODE_TR	E2 !!	5	On	1
PC-gate E3 decides control mode	MODE_TR	E3 !!	6	On	1
AI-error On	ERR_TR	AISign Err	1	Alarm	1
AI-error Off	ERR_TR	AISign Err	1	Normal	2

A.8 Process Controller PIDCONA

Table A–7. Event Texts for PIDCONA

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Lower limit L1 for measured value exceeded	H1L1_TR	MV<L1	1	<Value> <Unit>	1
Lower limit L1 for measured value re-entered	H1L1_TR	MV<L1	1	<Value> <Unit>	2

Table A–7. Event Texts for PIDCONA (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Upper limit H1 for measured value exceeded	H1L1_TR	MV>H1	2	<Value> <Unit>	1
Upper limit H1 for measured value re-entered	H1L1_TR	MV>H1	2	<Value> <Unit>	2
Lower limit (1) for deviation exceeded	H1L1_TR	DEV<L	3	<Value> <Unit>	1
Lower limit (1) for deviation re-entered	H1L1_TR	DEV<L	3	<Value> <Unit>	2
Upper limit (1) for deviation exceeded	H1L1_TR	DEV>H	4	<Value> <Unit>	1
Upper limit (1) for deviation re-entered	H1L1_TR	DEV>H	4	<Value> <Unit>	2
Lower limit L2 for measured value exceeded	H2L2_TR	MV<L2	1	<Value> <Unit>	1
Lower limit L2 for measured value re-entered	H2L2_TR	MV<L2	1	<Value> <Unit>	2
Upper limit H2 for measured value exceeded	H2L2_TR	MV>H2	2	<Value> <Unit>	1
Upper limit H2 for measured value re-entered	H2L2_TR	MV>H2	2	<Value> <Unit>	2
PC-gate LOCALFL decides control mode	MODE_TR	LOCAL !!	1	On	1
PC-gate MANFL decides control mode	MODE_TR	MAN !!	2	On	1
PC-gate AUTOFL decides control mode	MODE_TR	AUTO !!	3	On	1
PC-gate E1 decides control mode	MODE_TR	E1 !!	4	On	1
PC-gate E2 decides control mode	MODE_TR	E2 !!	5	On	1
PC-gate E3 decides control mode	MODE_TR	E3 !!	6	On	1
AI-error On	ERR_TR	AISign Err	1	Alarm	1

Table A–7. Event Texts for PIDCONA (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
AI-error Off	ERR_TR	AISign Err	1	Normal	2
Autotuning aborted	ADAP_TR	AT Abort	1	Alarm	1
Autotuning aborted	ADAP_TR	AT Abort	1	Normal	2
Autotuning failed	ADAP_TR	AT Fail	2	Alarm	1
Autotuning failed	ADAP_TR	AT Fail	2	Normal	2
Autotuning. Question to operator	ADAP_TR	AT Quest	3	Decision	3
Autotuning. Question to operator answered	ADAP_TR	AT Quest	3	Answered	4
There is an invalid sample rate	ADAP_TR	TS Fault	4	Alarm	1
There is an invalid sample rate	ADAP_TR	TS Fault	4	Normal	2
Adaptation failed	ADAP_TR	Ad Fail	5	Alarm	1
Adaptation failed	ADAP_TR	Ad Fail	5	Normal	2

A.9 Manual Station MANSTN

Table A–8. Event Texts for MANSTN

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Lower limit L1 for measured value exceeded	H1L1_TR	MV<L1	1	<Value> <Unit>	1
Lower limit L1 for measured value re-entered	H1L1_TR	MV<L1	1	<Value> <Unit>	2
Upper limit H1 for measured value exceeded	H1L1_TR	MV>H1	2	<Value> <Unit>	1
Upper limit H1 for measured value re-entered	H1L1_TR	MV>H1	2	<Value> <Unit>	2
Lower limit L2 for measured value exceeded	H2L2_TR	MV<L2	1	<Value> <Unit>	1
Lower limit L2 for measured value re-entered	H2L2_TR	MV<L2	1	<Value> <Unit>	2

Table A–8. Event Texts for MANSTN (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Upper limit H2 for measured value exceeded	H2L2_TR	MV>H2	2	<Value> <Unit>	1
Upper limit H2 for measured value re-entered	H2L2_TR	MV>H2	2	<Value> <Unit>	2
AI-error On	ERR_TR	AISign Err	1	Alarm	1
AI-error Off	ERR_TR	AISign Err	1	Normal	2

A.10 Ratio Station RATIOSTN

Table A–9. Event Texts for RATIOSTN

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Lower limit L1 for measured value exceeded	H1L1_TR	MV<L1	1	<Value> <Unit>	1
Lower limit L1 for measured value re-entered	H1L1_TR	MV<L1	1	<Value> <Unit>	2
Upper limit H1 for measured value exceeded	H1L1_TR	MV>H1	2	<Value> <Unit>	1
Upper limit H1 for measured value re-entered	H1L1_TR	MV>H1	2	<Value> <Unit>	2
Lower limit L2 for measured value exceeded	H2L2_TR	MV<L2	1	<Value> <Unit>	1
Lower limit L2 for measured value re-entered	H2L2_TR	MV<L2	1	<Value> <Unit>	2
Upper limit H2 for measured value exceeded	H2L2_TR	MV>H2	2	<Value> <Unit>	1
Upper limit H2 for measured value re-entered	H2L2_TR	MV>H2	2	<Value> <Unit>	2
AI-error On	ERR_TR	AISign Err	1	Alarm	1
AI-error Off	ERR_TR	AISign Err	1	Normal	2

A.11 User Defined Controller GENCON

Table A–10. Event Texts for GENCON

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
AI-error On	AL_TR	AISign Err	1	Alarm	1
AI-error Off	AL_TR	AISign Err	1	Normal	2
Limit for control deviation exceeded	AL_TR	Big Dev	4	Alarm	1
Limit for control deviation re-entered	AL_TR	Big Dev	4	Normal	2
Upper limit H2 for measured value exceeded	AL_TR	MV>H2	5	Alarm	1
Upper limit H2 for measured value re-entered	AL_TR	MV>H2	5	Normal	2
Upper limit H1 for measured value exceeded	AL_TR	MV>H1	6	Alarm	1
Upper limit H1 for measured value re-entered	AL_TR	MV>H1	6	Normal	2
Lower limit L1 for measured value exceeded	AL_TR	MV<L1	7	Alarm	1
Lower limit L1 for measured value re-entered	AL_TR	MV<L1	7	Normal	2
Lower limit L2 for measured value exceeded	AL_TR	MV<L2	8	Alarm	1
Lower limit L2 for measured value re-entered	AL_TR	MV<L2	8	Normal	2
Max limit for output sign On	LIM_TR	SpMaxLim	1	On	1
Max limit for output sign Off	LIM_TR	SpMaxLim	1	Off	2
Min limit for output sign On	LIM_TR	SpMinLim	2	On	1
Min limit for output sign Off	LIM_TR	SpMinLim	2	Off	2
Max limit for output sign On	LIM_TR	OpMaxLim	3	On	1
Max limit for output sign Off	LIM_TR	OpMaxLim	3	Off	2
Min limit for output sign On	LIM_TR	OpMinLim	4	On	1
Min limit for output sign Off	LIM_TR	OpMinLim	4	Off	2
Op. mode Balance On	IND_TR	Balance	1	On	1

Table A–10. Event Texts for GENCON (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Op. mode Balance Off	IND_TR	Balance	1	Off	2
Op. mode Manual Forced On	IND_TR	ManFrced	2	On	1
Op. mode Manual Forced Off	IND_TR	ManFrced	2	Off	2
Op. mode Manual On	IND_TR	Manual	3	On	1
Op. mode Manual Off	IND_TR	Manual	3	Off	2
Op. mode Auto On	IND_TR	Auto	4	On	1
Op. mode Auto Off	IND_TR	Auto	4	Off	2
Op. mode E1 On	IND_TR	E1	5	On	1
Op. mode E1 Off	IND_TR	E1	5	Off	2
Op. mode E2 On	IND_TR	E2	6	On	1
Op. mode E2 Off	IND_TR	E2	6	Off	2
Controller output On	IND_TR	Controller	9	On	1
Controller output Off	IND_TR	Controller	9	Off	2
Controller On Binary control	IND_TR	BinCtrl	10	On	1
Controller Off Binary control	IND_TR	BinCtrl	10	Off	2

A.12 Binary Object GENBIN

Table A–11. Event Texts for GENBIN

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Signal error On	AL_TR	SignErr	1	Alarm	1
Signal error Off	AL_TR	SignErr	1	Normal	2
Feedback error On	AL_TR	FBErr	2	Alarm	1
Feedback error Off	AL_TR	FBErr	2	Normal	2
Upper limit H2 for measured value exceeded	AL_TR	MV>H2	5	Alarm	1
Upper limit H2 for measured value re-entered	AL_TR	MV>H2	5	Normal	2

Table A–11. Event Texts for GENBIN (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Upper limit H1 for measured value exceeded	AL_TR	MV>H1	6	Alarm	1
Upper limit H1 for measured re-entered	AL_TR	MV>H1	6	Normal	2
Lower limit L1 for measured value exceeded	AL_TR	MV<L1	7	Alarm	1
Lower limit L1 for measured value re-entered	AL_TR	MV<L1	7	Normal	2
Lower limit L2 for measured value exceeded	AL_TR	MV<L2	8	Alarm	1
Lower limit L2 for measured value re-entered	AL_TR	MV<L2	8	Normal	2
Op. mode Interlock INTMODE On	INTL_TR	ModeIntl	1	On	1
Op. mode Interlock INTMODE Off	INTL_TR	ModeIntl	1	Off	2
Process Interlock INTPROC On	INTL_TR	ProcIntl	2	On	1
Process Interlock INTPROC Off	INTL_TR	ProcIntl	2	Off	2
Switchgear Interlock INTSWGR On	INTL_TR	SwgrIntl	3	On	1
Switchgear Interlock INTSWGR Off	INTL_TR	SwgrIntl	3	Off	2
Emergency Stop Interlock INTEMTP On	INTL_TR	EmTrpInt	4	On	1
Emergency Stop Interlock INTEMTP Off	INTL_TR	EmTrpInt	4	Off	2
Op. mode Central On	IND_TR	Central	1	On	1
Op. mode Central Off	IND_TR	Central	1	Off	2
Op. mode Local On	IND_TR	Local	2	On	1
Op. mode Local Off	IND_TR	Local	2	Off	2
Op. mode Remote On	IND_TR	Remote	3	On	1
Op. mode Remote Off	IND_TR	Remote	3	Off	2

Table A–11. Event Texts for GENBIN (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Op. mode Manual On	IND_TR	Manual	5	On	1
Op. mode Manual Off	IND_TR	Manual	5	Off	2
Op. mode Auto On	IND_TR	Auto	4	On	1
Op. mode Auto Off	IND_TR	Auto	4	Off	2
Op. mode Blocked On	IND_TR	CtrlBlk	6	On	1
Op. mode Blocked Off	IND_TR	CtrlBlk	6	Off	2
Op. mode Standby On	IND_TR	Standby	7	On	1
Op. mode Standby Off	IND_TR	Standby	7	Off	2
ON-indication On	IND_TR	On/Open	9	On	1
ON-indication Off	IND_TR	On/Open	9	Off	2
Indication changing On	IND_TR	PosChnge	10	On	1
Indication changing Off	IND_TR	PosChnge	10	Off	2

A.13 User Defined Object GENUSD

Table A–12. Event Texts for GENUSD

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Alarm ALQ1 On	AL_TR	Quality 1	1	Alarm	1
Alarm ALQ1 Off	AL_TR	Quality 1	1	Normal	2
Alarm ALQ2 On	AL_TR	Quality 2	2	Alarm	1
Alarm ALQ2 Off	AL_TR	Quality 2	2	Normal	2
Alarm ALF1 On	AL_TR	Fault 1	3	Alarm	1
Alarm ALF1 Off	AL_TR	Fault 1	3	Normal	2
Alarm ALF2 On	AL_TR	Fault 2	4	Alarm	1
Alarm ALF2 Off	AL_TR	Fault 2	4	Normal	2
Alarm ALF3 On	AL_TR	Fault 3	5	Alarm	1
Alarm ALF3 Off	AL_TR	Fault 3	5	Normal	2

Table A–12. Event Texts for GENUSD (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Alarm ALF4 On	AL_TR	Fault 4	6	Alarm	1
Alarm ALF4 Off	AL_TR	Fault 4	6	Normal	2
Alarm ALF5 On	AL_TR	Fault 5	7	Alarm	1
Alarm ALF5 Off	AL_TR	Fault 5	7	Normal	2
Alarm ALF6 On	AL_TR	Fault 6	8	Alarm	1
Alarm ALF6 Off	AL_TR	Fault 6	8	Normal	2
Interlock INTLU1 On	INTL_TR	Interl 1	1	On	1
Interlock INTLU1 Off	INTL_TR	Interl 1	1	Off	2
Interlock INTLU2 On	INTL_TR	Interl 2	2	On	1
Interlock INTLU2 Off	INTL_TR	Interl 2	2	Off	2
Interlock INTLU3 On	INTL_TR	Interl 3	3	On	1
Interlock INTLU3 Off	INTL_TR	Interl 3	3	Off	2
Interlock INTLU4 On	INTL_TR	Interl 4	4	On	1
Interlock INTLU4 Off	INTL_TR	Interl 4	4	Off	2
Interlock INTLU5 On	INTL_TR	Interl 5	5	On	1
Interlock INTLU5 Off	INTL_TR	Interl 5	5	Off	2
Interlock INTLU6 On	INTL_TR	Interl 6	6	On	1
Interlock INTLU6 Off	INTL_TR	Interl 6	6	Off	2
Op. mode M1 M1 On	IND_TR	OperPos1	1	On	1
Op. mode M1 M1 Off	IND_TR	OperPos1	1	Off	2
Op. mode M2 M2 On	IND_TR	OperPos2	2	On	1
Op. mode M2 M2 Off	IND_TR	OperPos2	2	Off	2
Op. mode M3 M3 On	IND_TR	OperPos3	3	On	1
Op. mode M3 M3 Off	IND_TR	OperPos3	3	Off	2
Op. mode Manual On MAN	IND_TR	Manual	5	On	1
Op. mode Manual Off MAN	IND_TR	Manual	5	Off	2
Op. mode Auto On AUTO	IND_TR	Auto	4	On	1
Op. mode Auto Off AUTO	IND_TR	Auto	4	Off	2
Op. mode Blocked On BLK	IND_TR	CtrlBlk	6	On	1

Table A–12. Event Texts for GENUSD (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Op. mode Blocked Off BLK	IND_TR	CtrlBlk	6	Off	2
Op. mode Standby On STBY	IND_TR	Standby	7	On	1
Op. mode Standby Off STBY	IND_TR	Standby	7	Off	2
Indication IND1 On	IND_TR	Indic.1	9	On	1
Indication IND1 Off	IND_TR	Indic.1	9	Off	2
Indication IND2 On	IND_TR	Indic.2	10	On	1
Indication IND2 Off	IND_TR	Indic.2	10	Off	2
Indication IND3 On	IND_TR	Indic.3	11	On	1
Indication IND3 Off	IND_TR	Indic.3	11	Off	2
Indication IND4 On	IND_TR	Indic.4	12	On	1
Indication IND4 Off	IND_TR	Indic.4	12	Off	2

A.14 Motor Control MOTCON

Table A–13. Event Texts for MOTCON

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Control voltage absent	I1_TR	ControlV	1	Alarm	1
Control voltage restored	I1_TR	ControlV	1	Normal	2
Bimetal relay has tripped	I1_TR	BimetalR	2	Alarm	1
Bimetal relay triggered	I1_TR	BimetalR	2	Normal	2
Local Stop	I1_TR	LStop	3	Alarm	1
Local Stop ended	I1_TR	LStop	3	Normal	2
Safety Monitor tripped	I1_TR	SafeMon	4	Alarm	1
Safety Monitor triggered	I1_TR	SafeMon	4	Normal	2
Main contactor Error	I1_TR	MainCErr	5	Alarm	1
Main contactor Error acknowledged	I1_TR	MainCErr	5	Normal	2
Monitor Low tripped	I1_TR	MonLow	6	Alarm	1

Table A–13. Event Texts for MOTCON (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Monitor Low restored	I1_TR	MonLow	6	Normal	2
Monitor High tripped	I1_TR	MonHigh	7	Alarm	1
Monitor High restored	I1_TR	MonHigh	7	Normal	2
Position A reached	I1_TR	Pos A	8	Alarm	1
Position A left	I1_TR	Pos A	8	Normal	2
Current limit 100 % exceeded	I1_TR	HighCurr	11	Alarm	1
Current limit 100 % re-entered	I1_TR	HighCurr	11	Normal	2
Position B reached	I1_TR	Pos B	12	Alarm	1
Position B left	I1_TR	Pos B	12	Normal	2
Control mode Local On	I2_TR	Local	2	On	1
Control mode Local Off	I2_TR	Local	2	Off	2
Control mode Test On	I2_TR	Test	3	On	1
Control mode Test Off	I2_TR	Test	3	Off	2
Control mode Standby On	I2_TR	Standby	4	On	1
Control mode Standby Off	I2_TR	Standby	4	Off	2
Control mode Sequence On	I2_TR	Sequence	5	On	1
Control mode Sequence Off	I2_TR	Sequence	5	Off	2
Op. mode Auto On	I2_TR	Auto	6	On	1
Op. mode Auto Off	I2_TR	Auto	6	Off	2
Interlock IC1 On	I2_TR	CInterl1	9	On	1
Interlock IC1 Off	I2_TR	CInterl1	9	Off	2
Interlock IC2 On	I2_TR	CInterl2	10	On	1
Interlock IC2 Off	I2_TR	CInterl2	10	Off	2
Interlock IB1 On	I2_TR	BInterl1	13	On	1
Interlock IB1 Off	I2_TR	BInterl1	13	Off	2
Interlock IB2 On	I2_TR	BInterl2	14	On	1
Interlock IB2 Off	I2_TR	BInterl2	14	Off	2
Interlock IB3 On	I2_TR	BInterl3	11	On	1

Table A–13. Event Texts for MOTCON (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Interlock IB3 Off	I2_TR	BInterl3	11	Off	2
Interlock IB4 On	I2_TR	BInterl4	12	On	1
Interlock IB4 Off	I2_TR	BInterl4	12	Off	2
Interlock IA On	I2_TR	AInterl	15	Off	1
Interlock IA Off	I2_TR	AInterl	15	Off	2
Control mode Local	ORD_TR	Local	1	Order	1
Control mode Test	ORD_TR	Test	2	Order	1
Control mode Standby	ORD_TR	Standby	3	Order	1
Control mode Central	ORD_TR	Central	4	Order	1
Control mode Sequence	ORD_TR	Sequence	13	Order	1
Op. mode Auto	ORD_TR	Auto	5	Order	1
Op. mode Manual	ORD_TR	Manual	6	Order	1
Blocking of IB1 and IB3 Interlock	ORD_TR	Blk.BI	7	Order	1
Deblocking of IB1 and IB3 Interlock	ORD_TR	Norm.BI	8	Order	1
Order Forward	ORD_TR	Forward	9	Order	1
Order Reverse	ORD_TR	Reverse	10	Order	1
Order Start	ORD_TR	Start	11	Order	1
Order Stop	ORD_TR	Stop	12	Order	1

A.15 Valve Control VALVECON

Table A–14. Event Texts for VALVECON

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
User defined Fault 1 coming	I1_TR	F1	1	Alarm	1
User defined Fault 1 passing	I1_TR	F1	1	Normal	2
User defined Fault 2 coming	I1_TR	F2	2	Alarm	1

Table A–14. Event Texts for VALVECON (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
User defined Fault 2 passing	I1_TR	F2	2	Normal	2
Position error open coming	I1_TR	PosErrO	3	Alarm	1
Position error open passing	I1_TR	PosErrO	3	Normal	2
Position error closed coming	I1_TR	PosErrC	4	Alarm	1
Position error closed passing	I1_TR	PosErrC	4	Normal	2
Valve in open position	I1_TR	Pos O	8	Alarm	1
Valve changes from open position	I1_TR	Pos O	8	Normal	2
Valve in closed position	I1_TR	Pos C	12	Alarm	1
Valve changes from closed position	I1_TR	Pos C	12	Normal	2
Valve in intermediate position	I1_TR	IntPos	16	Alarm	1
Valve not in intermediate position	I1_TR	IntPos	16	Normal	2
Control mode Local On	I2_TR	Local	2	On	1
Control mode Local Off	I2_TR	Local	2	Off	2
Control mode Test On	I2_TR	Test	3	On	1
Control mode Test Off	I2_TR	Test	3	Off	2
Control mode Standby On	I2_TR	Standby	4	On	1
Control mode Standby Off	I2_TR	Standby	4	Off	2
Control mode Sequence On	I2_TR	Sequence	5	On	1
Control mode Sequence Off	I2_TR	Sequence	5	Off	2
Op. mode Auto On	I2_TR	Auto	6	On	1
Op. mode Auto Off	I2_TR	Auto	6	Off	2
Interlock IC1 On	I2_TR	CInterl1	9	On	1
Interlock IC1 Off	I2_TR	CInterl1	9	Off	2
Interlock IC2 On	I2_TR	CInterl2	10	On	1
Interlock IC2 Off	I2_TR	CInterl2	10	Off	2
Interlock IB1 On	I2_TR	BInterl1	11	On	1

Table A–14. Event Texts for VALVECON (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Interlock IB1 Off	I2_TR	BInterl1	11	Off	2
Interlock IB2 On	I2_TR	BInterl2	12	On	1
Interlock IB2 Off	I2_TR	BInterl2	12	Off	2
Interlock IB3 On	I2_TR	BInterl3	13	On	1
Interlock IB3 Off	I2_TR	BInterl3	13	Off	2
Interlock IB4 On	I2_TR	BInterl4	14	On	1
Interlock IB4 Off	I2_TR	BInterl4	14	Off	2
Interlock IA On	I2_TR	AInterl	15	On	1
Interlock IA Off	I2_TR	AInterl	15	Off	2
Op. mode Local	ORD_TR	Local	1	Order	1
Op. mode Test	ORD_TR	Test	2	Order	1
Control mode Standby	ORD_TR	Standby	3	Order	1
Control mode Central	ORD_TR	Central	4	Order	1
Control mode Sequence	ORD_TR	Sequence	11	Order	1
Op. mode Auto	ORD_TR	Auto	5	Order	1
Op. mode Manual	ORD_TR	Manual	6	Order	1
Blocking of IB1 and IB3 Interlock	ORD_TR	Blk.BI	7	Order	1
Deblocking of IB1 and IB3 Interlock	ORD_TR	Norm.BI	8	Order	1
Order Open	ORD_TR	Open	9	Order	1
Order Close	ORD_TR	Close	10	Order	1

A.16 Group Start GROUP

Table A–15. Event Texts for GROUP

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Timeout sequence	I1_TR	Timeout G	1	Alarm	1
Timeout sequence acknowledged	I1_TR	Timeout G	1	Normal	2
Timeout step	I1_TR	Timeout S	2	Alarm	1
Timeout step acknowledged	I1_TR	Timeout S	2	Normal	2
User defined Fault 3 coming	I1_TR	Fault 3	3	Alarm	1
User defined Fault 3 passing	I1_TR	Fault 3	3	Normal	2
User defined Fault 4 coming	I1_TR	Fault 4	4	Alarm	1
User defined Fault 4 passing	I1_TR	Fault 4	4	Normal	2
User defined Fault 5 coming	I1_TR	Fault 5	5	Alarm	1
User defined Fault 5 passing	I1_TR	Fault 5	5	Normal	2
Position A reached	I1_TR	Pos A	8	Alarm	1
Position A left	I1_TR	Pos A	8	Normal	2
Position B reached	I1_TR	Pos B	12	Alarm	1
Position B left	I1_TR	Pos B	12	Normal	2
Control mode Local On	I2_TR	Local	2	On	1
Control mode Local Off	I2_TR	Local	2	Off	2
Control mode Test On	I2_TR	Test	3	On	1
Control mode Test Off	I2_TR	Test	3	Off	2
Control mode Standby On	I2_TR	Standby	4	On	1
Control mode Standby Of	I2_TR	Standby	4	Off	2f
Control mode Sequence On	I2_TR	Sequence	5	On	1
Control mode Sequence Off	I2_TR	Sequence	5	Off	2
Op. mode Auto On	I2_TR	Auto	6	On	1
Op. mode Auto Off	I2_TR	Auto	6	Off	2
Interlock IC1 On	I2_TR	CInterl1	9	On	1
Interlock IC1 Off	I2_TR	CInterl1	9	Off	2
Interlock IC2 On	I2_TR	CInterl2	10	On	1

Table A–15. Event Texts for GROUP (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Interlock IC2 Off	I2_TR	CInterl2	10	Off	2
Interlock IB1 On	I2_TR	BInterl1	13	On	1
Interlock IB1 Off	I2_TR	BInterl1	13	Off	2
Interlock IB2 On	I2_TR	BInterl2	14	On	1
Interlock IB2 Off	I2_TR	BInterl2	14	Off	2
Interlock IB3 On	I2_TR	BInterl3	11	On	1
Interlock IB3 Off	I2_TR	BInterl3	11	Off	2
Interlock IB4 On	I2_TR	BInterl4	12	On	1
Interlock IB4 Off	I2_TR	BInterl4	12	Off	2
Interlock IA On	I2_TR	AInterl	15	On	1
Interlock IA Off	I2_TR	AInterl	15	Off	2

A.17 Group Alarm GRPALARM

Table A–16. Event Texts for GRPALARM

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Abnormal position Off	DISTR_TR	Disturb	1	Alarm	1
Abnormal position On	DISTR_TR	Disturb	1	Normal	2
Blocking of event handling	DISTR_TR	Alarm	2	Blocked	3
Deblocking of event handling	DISTR_TR	Alarm	2	Deblocked	4
Blocking of printout	DISTR_TR	Printout	3	Blocked	3
Deblocking of printout	DISTR_TR	Printout	3	Deblocked	4
Blocking master On	PREV_TR	Blk Master	1	On	1
Blocking master Off	PREV_TR	Blk Master	1	Off	2
First error On	PREV_TR	First Err	2	On	1
First error Off	PREV_TR	First Err	2	Off	2
Prevent event handling On	PREV_TR	Event	3	Blocked	3

Table A–16. Event Texts for GRPALARM (Continued)

Events	Event Treat pointer	Property text		Event text	
		Standard text	Line No in Event Treat	Standard text	Line No in Event Treat
Prevent event handling Off	PREV_TR	Event	3	Deblocked	4
Blocking of the members event handling	PREV_TR	MembAlarm	4	Blocked	3
Deblocking of the members event handling	PREV_TR	MembAlarm	4	Deblocked	4
Blocking of the members event printout	PREV_TR	MembPrint	5	Blocked	3
Deblocking of the members event printout	PREV_TR	MembPrint	5	Deblocked	4

Appendix B System Alarms

B.1 System alarms SYSMES_DESCR

The cross reference between the text in the system list and record number in SYSMES_DESCR used for external alarm announcements are described in the table below.

Table B-1. Crossreference between system alarm texts and record number in SYSMES_DESCR

System status text	Error message Note! @ will be replaced by a proper text when alarm is generated	Record number in TEXT LF31	Record number in SYSMES_DESCR LF219
AF100 STATUS	Bus controller error Bus @	1214	152
AF100 STATUS	Station error Bus @ stn @	1215	153
AF100 STATUS	Bus controller OK Bus @	1216	154
AF100 STATUS	Station OK Bus @ stn @	1217	155
AF100 STATUS	No access to stn @ bus@	1211	158, 232
AF100 STATUS	Fatal bus error	1220	159
AF100 STATUS	Cable break Bus @ Cable @	1221	160
AF100 STATUS	Cable OK Bus @ Cable @	1224	163
AF100 STATUS	Module error b@ s@ p@	1352	266
AF100 STATUS	Module OK b@ s@ p@	1353	267
AF100 STATUS	Module warning b@ s@ p@	1354	268
AF100 STATUS	Power supply A error b@ s@	1355	269
AF100 STATUS	Power supply A OK b@ s@	1356	270
AF100 STATUS	Power supply B error b@ s@	1357	271
AF100 STATUS	Power supply B OK b@ s@	1358	272
AF100 STATUS	Missing controller Bus @	1271	221
CLOCKSYNCH	No sync pulse available	314	54
CLOCKSYNCH	Clock drifts out of range	315	55
CLOCKSYNCH	Channels not found	1339	258
CLOCKSYNCH	Failed to select ClockMaster	1340	259

Table B-1. Crossreference between system alarm texts and record number in SYSMES_DESCR (Continued)

System status text	Error message Note! @ will be replaced by a proper text when alarm is generated	Record number in TEXT LF31	Record number in SYSMES_DESCR LF219
CLOCKSYNCH	Set time! Unexp b-up nod @	1341	260
CLOCKSYNCH	More than one ClockMaster	1342	261
COM BOARD	Buf. err. St=@ H @	327	69
COM BOARD	Dl. err. St=@ H @	328	70
COM BOARD	Res. err. St=@ H @	329	71
CPU STATUS	Auto CPU switch	291	31
CPU STATUS	Manual CPU switch	292	32
CPU STATUS	Error in CPU	293	33
CPU STATUS	Error in RCU	294	34
CPU STATUS	Memory error pos @	295	35
CPU STATUS	Memory error clear pos @	1361	277
DEV ST	Error	284	20
DEV ST	Device not ready	285	21
DEV ST	Board init error	286	22
DEV ST	Bus error	287	23
DEV ST	Mas mem error	290	26,27,28,29,30
DEV ST	Ph. connection error	303	43
DEV ST	Board error	304	44
FPM	PU535 pos @ @ error	1283	217
FPM	PU535 pos @ @ working	1284	218
LAN	MAC Checksum error	1246	201
LAN	MAC Collision error	1247	202
LAN	MAC Loss of carrier ch @	1248	203
LAN	Ch @ cable fault dist @ m	1249	204
LAN	MAC Init error ch @	1250	205
LAN	MAC Babble error ch @	1272	206
LAN	MAC Transceiv error ch @	1273	207

Table B-1. Crossreference between system alarm texts and record number in SYSMES_DESCR (Continued)

System status text	Error message Note! @ will be replaced by a proper text when alarm is generated	Record number in TEXT LF31	Record number in SYSMES_DESCR LF219
MFB STATUS	Cable break Bus @ Cable @	1222	161,219
MFB STATUS	Both cables broken Bus @	1223	162
MFB STATUS	Bus controller OK Bus @	1218	156
MFB STATUS	Cable OK Bus @ Cable @	1225	164, 220
MFB STATUS	Both cables OK Bus @	1226	165
MFB STATUS	Bus controller error	1212	233
MG Database	Error in MG_FILTER	324	63,65,66
MG Database	Error in MG_SUBS_PAR	325	64
MG Init	Error at init of MasterGate	326	67
MISC ST	DP board in order	352	24
MISC ST	DP board out of order	353	25,
MISC ST	SEQ-database not found	354	94
MISC ST	PB board error	355	95,96
MISC ST	MISC BOARDS full	356	97
MISC ST	MV100 unit error	357	98
MISC ST	MV100 contr. out of order	358	99
MISC ST	MV100 contr. in order	359	100
MISC ST	MV100 unit out of order	360	101
MISC ST	MV100 unit in order	361	102
MISC ST	DSDC board out of order	362	103
MISC ST	DSDC board error	363	104,105
MISC ST	DSDC board in order	364	106
MISC ST	FBP board out of order	365	107
MISC ST	FBP board in order	366	108
MISC ST	DSWX board out of order	367	109
MISC ST	DSWX board in order	368	110
MISC ST	DSWX board error	369	111

Table B-1. Crossreference between system alarm texts and record number in SYSMES_DESCR (Continued)

System status text	Error message Note! @ will be replaced by a proper text when alarm is generated	Record number in TEXT LF31	Record number in SYSMES_DESCR LF219
MISC ST	Odd address given to DSDC	370	140
MISC ST	DSDP board in order	352	199
MISC ST	DSDP board out of order	353	200
MN COMM	Board not working pos @ @	1266	228
MN COMM	Board not working pos @	1274	208, 230
MN COMM	Board not working pos @	1275	209
MN COMM	Board working pos @	1276	210
MN COMM	Board not working pos @ @	1277	211,231
MN COMM	Board not working pos @ @	1278	212
MN COMM	Board working pos @ @	1279	213
MN COMM	Board not working pos @ @	1280	214
MN COMM	Board not working pos @ @	1281	215
MN COMM	Board working pos @ @	1282	216
MN COMM	Board working pos @ @	1286	234
MN STATUS	Error in channel B	372	141
MN STATUS	Error bus @ node @ chan A.	374	145
MN STATUS	Bus @ node @ channel A. OK	375	146
MN STATUS	Error bus @ node @ chan B	376	147
MN STATUS	Bus @ node @ channel B. OK	377	148
MN STATUS	Net @ working	297	37
MN STATUS	Com. with node @	298	38
MN STATUS	No com. with node @	299, 302	39,42
MN STATUS	Error in channel A	371	40
MN STATUS	Contact with @ OK	373	41
MN STATUS	Conn. with netw/node	305	45
MN STATUS	Conn. lost netw/node @/@	317	57
MN STATUS	Comm. stop board/err @	318	58

Table B-1. Crossreference between system alarm texts and record number in SYSMES_DESCR (Continued)

System status text	Error message Note! @ will be replaced by a proper text when alarm is generated	Record number in TEXT LF31	Record number in SYSMES_DESCR LF219
MN STATUS	Comm. restarted board @	319	59
MN STATUS	Error in board DSCS14x	332	74
MN STATUS	Board DSCS14x working	333	75
MVI	Conn with netw/node @ @	1351	265
OBJECT TRANS	Ref err Node @ LF @ LR @	331	73
PBC STATUS	Bus extender error	1213	151
PBC STATUS	Bus extender OK	1219	157
POW SUPP ST	Backup voltage CPU L error	334	76
POW SUPP ST	Backup voltage CPU R error	335	77
POW SUPP ST	Backup voltage CPU L OK	336	78
POW SUPP ST	Backup voltage CPU R OK	337	79
POW SUPP ST	Voltage regulators working	338	80,180
POW SUPP ST	Voltage regulators faulty	339	81, 175, 339
POW SUPP ST	Voltage regulators present	340	82,178,179
POW SUPP ST	Voltage regulators missing	341	83,176,177
POW SUPP ST	24V supply A/B working	342	84, 86,172, 174
POW SUPP ST	24V supply A/B faulty	343	85, 87, 171,173
POW SUPP ST	AC SUPPLY working	346	88
POW SUPP ST	AC SUPPLY faulty	347	89
POW SUPP ST	TC520 Error	1231	170
POW SUPP ST	Backup Battery @ faulty	1232	181
POW SUPP ST	Backup Battery @ working	1233	182
POW SUPP ST	Battery Charger @ faulty	1234	183
POW SUPP ST	Battery Charger @ working	1235	184
POW SUPP ST	24V I/O supply A faulty	1238	187
POW SUPP ST	24V I/O supply A working	1239	188
POW SUPP ST	24V I/O supply B faulty	1240	189

Table B-1. Crossreference between system alarm texts and record number in SYSMES_DESCR (Continued)

System status text	Error message Note! @ will be replaced by a proper text when alarm is generated	Record number in TEXT LF31	Record number in SYSMES_DESCR LF219
POW SUPP ST	24V I/O supply B working	1241	190
POW SUPP ST	I/O voltage regulator faulty	1268	191,193
POW SUPP ST	Voltage regulator missing	1269	192
POW SUPP ST	Voltage regulator working	1270	194
PROC I/O ST	@-board error	280	1,2,3,4,5,6,7,8,9,10, 11,12,142,143
PROC I/O ST	@-board working	281	15,16,17,18,144, 149, 150
PROGRAM CARD	Correct card @ @	1227	166
PROGRAM CARD	Memory error @ @	1228	167
PROGRAM CARD	Missing card @ @	1229	168
PROGRAM CARD	Wrong card @ @	1230	169
REM I/O ST	Error in bus @ node @	282	13,14
REM I/O ST	Bus @ node @ working	283	19
REM I/O ST	Error in bus controler @	330	72
TTD BACK UP	MM full Next backup @	306	46
TTD BACK UP	MM full Cyclic backup failed	307	47
TTD MM LOG	MM missing Insert within 10 m	308	48
TTD MM LOG	MM missing Logging failed	309	49
TTD BACKUP	Backup of log @ failed	316	56
	Prom backup installed	320	51
	Prom backup missing	321	52,60
	Battery backup out of order	313	53
	Error in prom backupchk.sum	322	61
	Prom backup loading failed	323	62
	All cooling fans working	348	90
	Any cooling fans faulty	349	91
	User defined signal F1=@	350	92

Table B-1. Crossreference between system alarm texts and record number in SYSMES_DESCR (Continued)

System status text	Error message Note! @ will be replaced by a proper text when alarm is generated	Record number in TEXT LF31	Record number in SYSMES_DESCR LF219
	User defined signal F2=@	351	93
	FAN for I/O faulty	1242	195
	FAN for i/O working	1243	196
	FAN for CPU faulty	1236	185
	FAN for CPU working	1237	186
	User defined error @	1244	197
	User defined signal @ OK	1245	198
	PCF @ error	1337	256
	PCF @ signal OK	1338	257
	/etc/hosts server missing	1360	274
SYSTEMSTATUS	Init error in node @	310	50,68
SYSTEMSTATUS	Failed to connect database	1287	235
SYSTEMSTATUS	Init failed	1288	236
SYSTEMSTATUS	Device not respond No update	1289	237
SYSTEMSTATUS	Device has an error	1290	238
SYSTEMSTATUS	Suspected printer problem	1345	264
UPS	UPS supervision failed	1292 - 1303	240
UPS	Power fail. Please logout	1304	241
UPS	Main power back OS normal op	1305	242
UPS	Low battery. Logout at once	1306	243
UPS	UPS is off, turn UPS on	1307	244
UPS	Communication problem	1308	245
UPS	UPS fault call for UPSservice	1309	246
UPS	Environ alarm1 Logout at once	1310	247
UPS	Environ alarm2 Logout at once	1311	248
UPS	Environ alarm3 Logout at once	1312	249
UPS	Environ alarm4 Logout at once	1313	250

Table B-1. Crossreference between system alarm texts and record number in SYSMES_DESCR (Continued)

System status text	Error message Note! @ will be replaced by a proper text when alarm is generated	Record number in TEXT LF31	Record number in SYSMES_DESCR LF219
UPS	Restarting of UPS monitoring	1314	251
UPS	Aborting of UPS monitoring	1315	252
CENTRAL B-UP	Failure	1326 - 1330	253
STATION B-UP	Failure	1333, 1334	254
ONLINEBUILD	Failure	1335, 1336	255
BASIC	Key in Max dialog position	1343	262
BASIC	Key in Min dialog position	1344	263
OMF	Shared memory exceeds limit	1359	273

Appendix C Keyboard Functions

C.1 Events for specific Operator Station functions

The following tables can be used as help lists when you define keys on your own keyboard. The functions are the same as are available on the Advant Station 500 Series Operator Station functional keyboard.

Table C-1. Available Keyboard Functions

Keyboard Function (on Functional Keyboard)	Event	Keyboard Key (on your own keyboard)
Request for system status display	SystemStatusKey	
Request for system list display	SystemListKey	
Request for overlap system list display	SystemListAsOverlapKey	
Request for configuration display	ConfigurationMenuKey	
Request for status list menu display	StatusListMenuKey	
Request for status list display	StatusListKey	
Request for display menu display	DisplayMenuKey	
Request for overlap display menu display	DisplayMenuAsOverlapKey	
Request for alarm list display	AlarmListKey	
Request for overlap alarm list display	AlarmListAsOverlapKey	
Request for event list display	EventListKey	
Request for overlap event list display	EventListAsOverlapKey	
Request for left display	PageLeftKey	
Request for right display	PageRightKey	
Request for previous display	PrevDisplayKey	
Request for an object display	ObjectDisplayKey	
Request for an overlap object display	ObjectDisplayAsOverlapKey	
Request for an object closeup	ObjectCloseupKey	
Request for an object trend display	ObjectTrendKey	
Request for an overlap object trend	ObjectTrendAsOverlapKey	
Request for next dialog key group	NextBlockKey	

Table C-1. Available Keyboard Functions (Continued)

Keyboard Function (on Functional Keyboard)	Event	Keyboard Key (on your own keyboard)
Request for the dialog key group above	PrevLevelKey	
Unselect on selected object	DialogExitKey	
Input field for display request	DisplayRequestKey	
Input field for overlap display request	OverlapDisplayRequestKey	
Input field for object request	ObjectRequestKey	
Input field for overlap object request	ObjectCloseupRequestKey	
Select previous object	PrevObjectKey	
Request for acknowledge alarm	AckKey	
Request for maxdialog	MaxDialogKey	
Request for mindialog	MinDialogKey	
Dynamic key N (N=1-10)	DynKeyN (N=1-10)	
Request for silence on audible alarm	SilenceKey	
Request for hardcopy black and white	B_WHardcKey	
Request for hardcopy in color	ColorHardcKey	
Request for help display	HelpKey	
Request for basic display	BasicDisplayKey	
Request to increase value with 1%	SmallIncreaseKey	
Request to increase value with 10%	LargeIncreaseKey	
Request to decrease value with 1%	SmallDecreaseKey	
Request to decrease value with 10%	LargeDecreaseKey	
Request to set value to one	OnKey	
Request to set value to zero	OffKey	
Request for manual mode	ManKey	
Request for auto mode	AutoKey	
Request for external1 mode	E1Key	
Request for external2 mode	E2Key	
Request for the direct selection keys	DisplaynKeyN (N=1-40)	

C.2 Keysym for the most common Keypad Keys

Table C-2. Available Keysym Functions

Keypad key	Keysym	Keyboard Key (on your own keyboard)
/	KP_Divide	
*	KP_Multiply	
+	KP_Add	
-	KP_Subtract	
Enter	KP_Enter	
.	KP_Decimal	
0	KP_0	
1	KP_1	
2	KP_2	
3	KP_3	
4	KP_4	
5	KP_5	
6	KP_6	
7	KP_7	
8	KP_8	
9	KP_9	

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- D3 Display Transfer 3-17
- D7 Text Editor 3-50

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- D3 External Alarm 3-97
- D4 Group Alarm 3-117
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